CAMBODIA ATLAS OF GENDER AND ENVIRONMENT

February 2018
By The Asia Foundation

About the Project

Climate change and its associated risks have had extensive impacts on Cambodians, with patterns of drought and flood conditions intensifying over the last decade. While in general women are known to be more negatively affected by environmental change than men, there has been relatively little research on how different groups of women and men experience and are affected differently by climate change. As such, understanding of the gender dimensions around environmental management and resilience remains weak. At the same time, there are limited number of maps available to offer this understanding especially after the period of the Millennium Development Goals, and there is a lack of maps derived from important recent national census surveys.

In 2017, The Asia Foundation initiated the "Atlas of Gender and Environment" project to provide a more in-depth understanding of how gender informs environment-related vulnerabilities, and the impact of climate change and disaster risks on different groups of women's and men's lives and livelihoods in Cambodia. The project has analyzed existing data and maps in order to understand environmental factors and resistance to climate change. The project provides a gender analysis of selected climate change impacts and implications for disaster risk reduction. In addition to creating over 60 visual maps, a series of selected analytical stories were prepared drawing from different maps to provide key insights on gender and climate vulnerabilities.

The project is implemented by the Asia Foundation in Cambodia and Open Development Cambodia (ODC) is our partner for this project. ODC will host maps and other outputs at the conclusion of this project, making this analysis available to practitioners and policy-makers.

Project Outputs

To access our project outputs, please go to the following links to see our maps produced and analytical stories.

- Maps
- Analytical stories of Vulnerability and Possibilities for Resilience

The Asia Foundation

The Asia Foundation is a nonprofit international development organization committed to improving lives across a dynamic and developing Asia. Informed by six decades of experience and deep local expertise, our

work across the region addresses five overarching goals—strengthen governance, empower women, expand economic opportunity, increase environmental resilience, and promote regional cooperation.

Headquartered in San Francisco, The Asia Foundation works through a network of offices in 18 Asian countries and in Washington, DC. Working with public and private partners, the Foundation receives funding from a diverse group of bilateral and multilateral development agencies, foundations, corporations, and individuals. In 2017, we provided $83.7 million in direct program support and distributed textbooks and other educational materials valued at $8.7 million.

The project is funded by Chemonics International with support from the US Agency for International Development. The project also receives technical support from the NASA's Servir Mekong through Asian Disaster Preparedness Center (ADPC). Other technical support also comes from Spatial Informatics Group (SIG) and Stockholm Environment Institute (SEI).

The Asia Foundation

Cambodia Atlas of Gender and Environment:
Analytical Stories of Vulnerability and Possibilities for Resilience

1. Environment and The Effect of Failing Crop

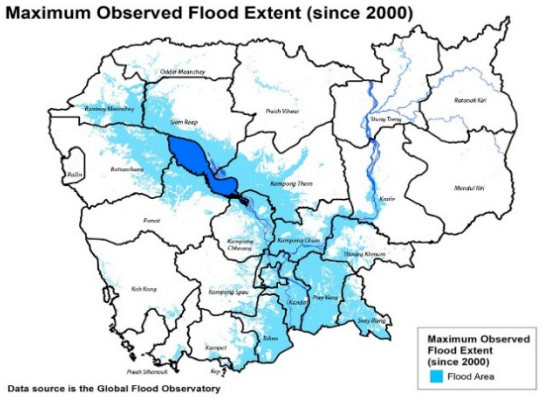
Rice is Cambodia's staple food and most important crop. The maps below give a clear depiction of how the majority of the country's rice-growing regions are threatened by increasingly frequent and intense droughts and floods. For instance, the *Maximum Observed Flood Extent* map depicts maximum flood levels experienced since 2000; the extreme levels of flooding depicted in this map are likely to become more of the norm as scientists anticipate increased severity and frequency of floods – far beyond the natural flood cycle – due to changing weather patterns and riverway construction. Droughts, floods, high temperatures, and uncertain rainfall lead to substantial agricultural production losses, which heighten the vulnerability of the rural poor to debt, illness, malnutrition, and other negative outcomes. The impacts of crop failure are made more acute due to low rates of crop insurance. These risks are amplified for female-headed households, which are numerous in much of the rice-producing region to the south of Tonle Sap Lake. There is a paucity of sex-disaggregated data on what percentage of these female-headed households depend on agriculture for their livelihood, or what proportion of total rice farmers are women, but the World Bank estimates that 75% of Cambodian women are employed in agriculture, and so women and female-headed households in this region are likely to be disproportionately burdened by failing crops. This is a consistent concern across Cambodia. Even the female-headed households around Phnom Penh that rely on the garment and manufacturing sector for their incomes are likely to be disproportionately impacted by rising food prices due to crop failure because of more limited income and economic opportunities than male-headed households.

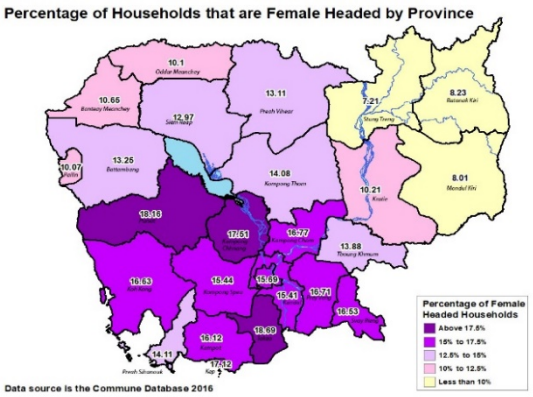
These maps provide a powerful tool to visualize some of the environment-related vulnerabilities that Cambodian women face. Importantly, the maps also point to important activities for increasing climate resilience. First, these maps demonstrate a clear need for heightened efforts to collect sex-disaggregated data on occupation and decision-making power which would help make future interventions more targeted in geography and content. It is especially important to look at women's decision-making power in communities and in households, for a lack of either impedes opportunities to increase resilience or women's wellbeing and empowerment. Second, these maps suggest that this southern region may be a productive area to engage in efforts to simultaneously empower women and increase the resilience of their communities. Strategies could include increasing services for and working with women farmers, particularly those in female-headed households, to promote women's leadership

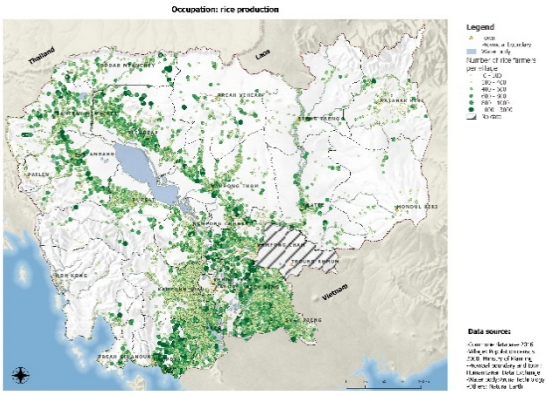
within communities; expanding nonfarm environmentally-resilient income-earning opportunities for women; and developing resilient agricultural practices and technologies that improve yields. Some

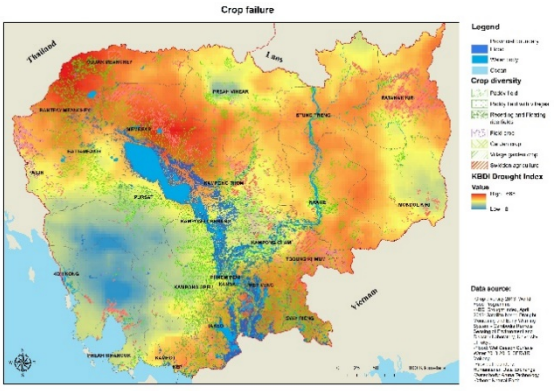
examples of the latter include building raised bed gardens, utilizing drip irrigation, and exploring climate-resilient farming techniques such as aquaculture or crop diversification and phasing. Scaling up nascent initiatives to provide farmers with reputable crop insurance or expand women's landholdings would also do much to increase women's climate resilience and improve income and food security.

Maps used: (1) Crop Failure, (2) Maximum Observed Flood Extent, (3) Occupation: Rice Production, (4) Percentage of Households that are Female Headed by Province









2. Environment and Health

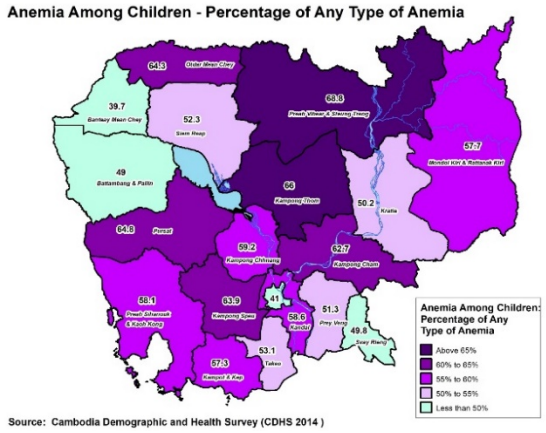
Increasingly severe and erratic floods and droughts have gender-related adverse health outcomes. Droughts result in declining quality and quantity of water sources. This requires women and girls in Cambodia to spend more time seeking fresh water, increasing their exposure to health risks such as parasites from nonpotable water. Droughts also decrease the availability of nutritious food. Floods lead to an increase in vector- and water-borne diseases, such as malaria, dengue, and diarrhea. Higher

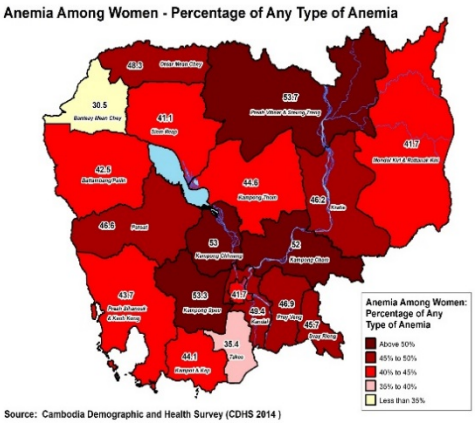
incidences of illness and fever increase women's and children's already substantial risks of malnutrition and nutritional deficencies, such as anemia. Illness and disease at the household and individual levels

also place additional burdens on women, increasing their caretaking responsibilities and decreasing their own wellbeing, productivity, and time and ability to pursue income-earning activities or taking part in decision-making processes. All of these outcomes reduce women's environmental resilience and increase gender inequality.

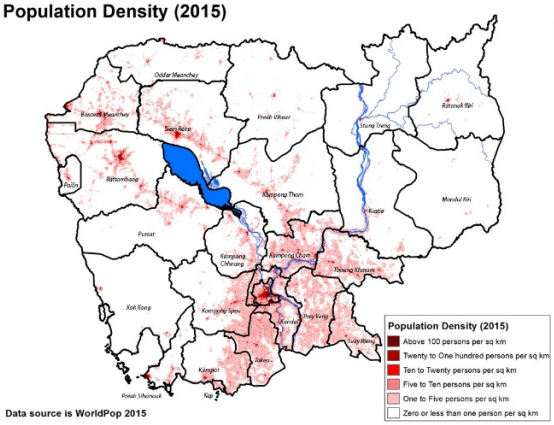
Health outcomes are of course linked with many factors besides the environment, such as income and literacy levels or educational and water infrastructure. However, these maps show where some of these existing vulnerabilities overlap with climate-related stresses. This helps to predict where future increased vulnerabilities will exist as environmental changes exacerbate today's health challenges. For instance, these maps indicate the importance of working with women and communities in the northeast area of the country now to build up environmental and health resilience in order to moderate coming challenges. While bearing in mind that this region is less populated than areas to the west or south, these maps indicate where interventions such as increasing women's literacy and bolstering fresh water access are needed in order to strengthen the health and wellbeing of populations while also increasing their ability to adapt to and mitigate climate risks.

Maps used: (1) Anemia Among Women – Percentage of Any Type of Anemia, (2) Anemia Among Children – Percentage of Any Type of Anemia, (3) Population density, (4) Access to Clean Water by Province, (5) Average Distance to Nearest Senior Secondary School, (6) Ratio of Illiterate Females to Males Aged 15-17 years, (7) Maximum Observed Flood Extent (8) Crop Failure



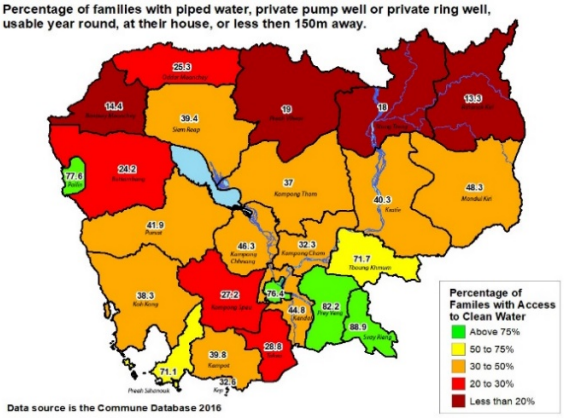


Population Density (2015)



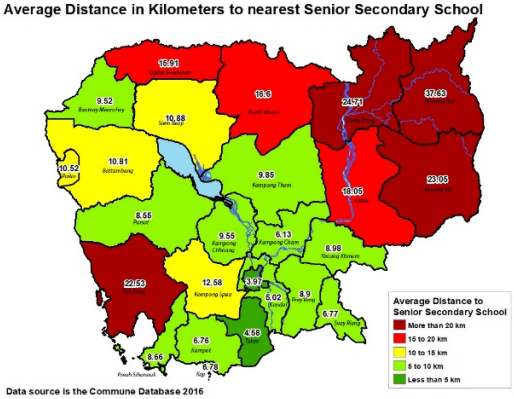
Data source is WorldPop 2015

Percentage of families with piped water, private pump well or private ring well, usable year round, at their house, or less then 150m away.



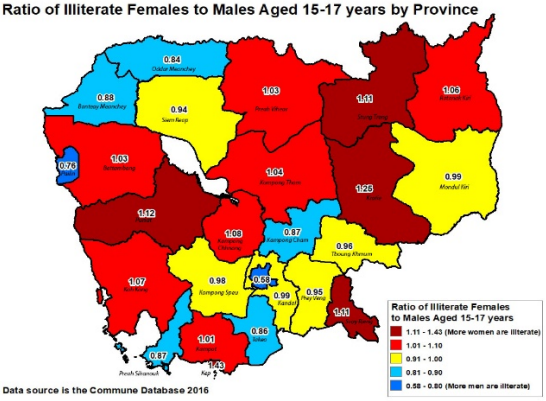
Data source is the Commune Database 2016

Average Distance in Kilometers to nearest Senior Secondary School



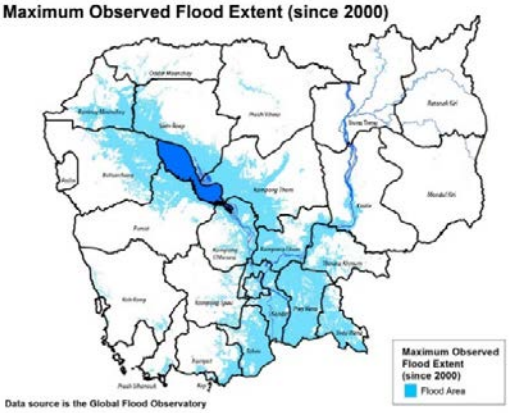
Data source is the Commune Database 2016

Ratio of Illiterate Females to Males Aged 15-17 years by Province



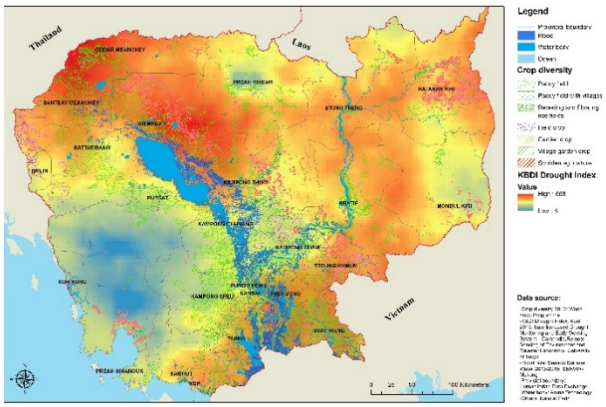
Data source is the Commune Database 2016

Maximum Observed Flood Extent (since 2000)



Data source is the Global Flood Observatory

Crop failure



3. Environment and Migration

Natural disasters and extreme weather can increase migration pressures by threatening rural livelihoods and food security. Failed agricultural and fishing efforts, especially when farmers are without insurance, often leave farmers in crippling debt and with no choice but to move to find other income-earning opportunities. This debt often renders migrants in their new destinations, and their family members

who stay home, with decreased capacity to respond to further environmental stresses. Migration patterns in Cambodia typically take one of two forms: domestic rural-to-urban migration and international migration (most often to Thailand).

Migration can be a successful climate adaptation strategy for migrants, their families, and their communities of origin. For instance, remittances from migrants may increase families' resilience, health, and ability to adapt to future climate risks. However, migration also carries considerable risks. Both male and female migrants risk abuse and exploitation, especially when migrating across borders. Female migrants are particularly at risk of being trafficked. Receiving cities and communities often benefits from migrants' skills and labor, but large population redistribution can also tax urban resources, infrastructure, and services, potentially lowering these cities' environmental resilience. In addition, men in Cambodia tend to be more mobile than women and are therefore better able to migrate when their employment in the agricultural or fishing sectors is threatened by weather. This often means that women whose male relatives migrated must stay behind and care for their families. The combination of environmental stresses and associated impacts (such as increased illness) with the loss of male livelihood and migration often leaves women with a drastically increased workload alongside income and food insecurity, thus further lowering women's personal and household climate resilience.

These maps do not indicate destination or motivation of migrants, but when viewed alongside available environmental data they give a clear picture of where both migration and climate pressures are greatest on men and women. This is particularly true in more impoverished agricultural areas with higher risks of droughts or floods, where rural workers are more limited in their ability to pursue costly resilience-building activities such as the expansion of large irrigation systems or implementation of water harvesting and storage systems. These maps suggest where strategic resilience-building efforts should be pursued to strenghten communities' ability to adapt to and mitigate environmental changes. One key example from the maps is Battambang province, which has higher levels of drought/floods, agriculture, poverty, and migration.

For instance, to minimize risk of employment loss and the need for migration, education and capacity building work on environmental resilience can be done with farmers and fishers in the regions of high outward migration, poverty rates, and risk of crop failure. Some important topics to focus on include accessing and implementing climate-resilient crops and agricultural or fishing techniques, improving seed selection, and adjusting growing seasons. Other impactful changes may include improving farmers' access to insurance, transportation systems, and community weather monitoring.

Studies have shown the important role that women play in diversifying family income where envionmental changes threaten rural livelihoods and food security. Therefore, other important interventions to build resilience and decrease migration pressures include increasing women's access to workable land, credit, and markets, and building women's capacity to engage with and develop their own micro, small, and medium enterprises (farm-based and not). As with efforts to increase farmers' resilience, building women's climate and economic resilience would be a strategic intervention in areas

where environmental stresses and migration pressures are high, such as around the northern part of Tonle Sap Lake (e.g. Banteay Meanchey).

As the maps depict where the vast majority of outward migration originates, they also show where efforts to increase potential migrants' knowledge of their rights can occur alongside work to increase environmental resilience. This will increase the likelihood that migrants are safe, secure, and can earn livelihoods to support their families and improve the resilience of their home communities. The northwest and southern regions with high cross-border migration are key areas to focus anti-trafficking and migrant rights education.

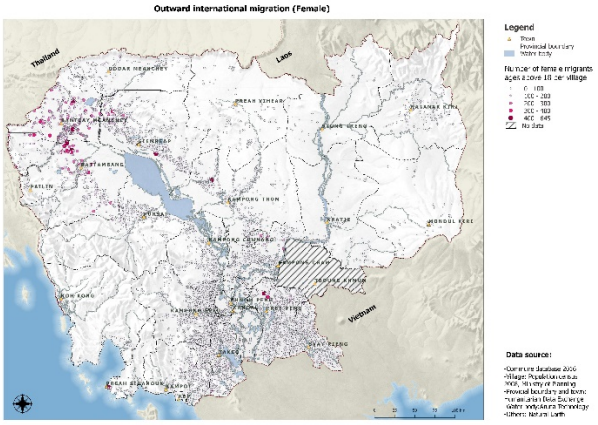
A substantial percentage of domestic migrants, especially female migrants, move to Phnom Penh. Efforts should be made now to build up the city's ability to absorb future flows of migrants while withstanding increasing climate pressures, such as for potable water.

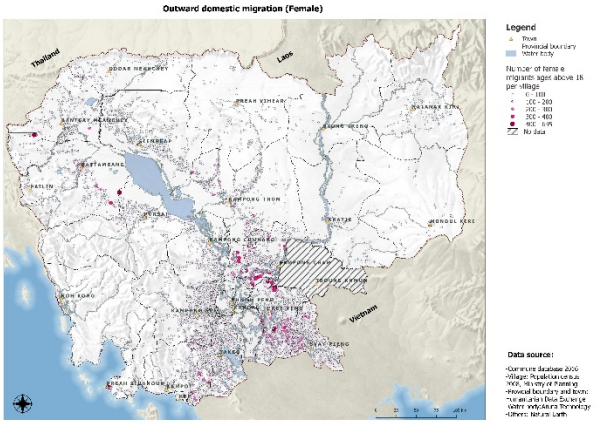
Finally, these maps point to a need for better data. There is a need for increased collection of sex-disaggregated occupation and migration data, which would contribute to better understanding of the pressures facing men and women in the face of environment-linked stresses. Improved longitudinal data on temperature fluctuations, which can have a major impact on the viability of fishing and aquaculture, would also improve our understanding of climate-related factors influencing migration patterns.

Citation:

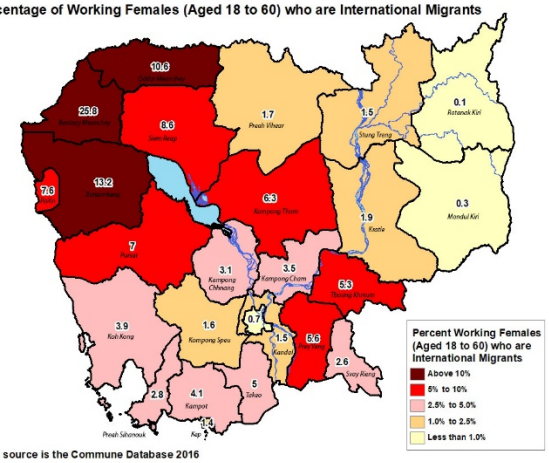
G. Oudry, K. Pak, C. Chea. Assessing Vulnerabilities and Responses to Environmental Changes in Cambodia. International Organization for Migration, Phnom Penh, 2016.

Maps used: (1) Outward International Migration (Female), (2) Outward Domestic Migration (Female), (3) Percentage of Working Females (Aged 18 to 60) who are International Migrants, (4) Percentage of Working Females (Aged 18 to 60) who are Domestic Migrants, (5) Outward International Migration (Male), (6) Outward Domestic Migration (Male), (7) Crop Failure, (8) Percentage of Poor Households



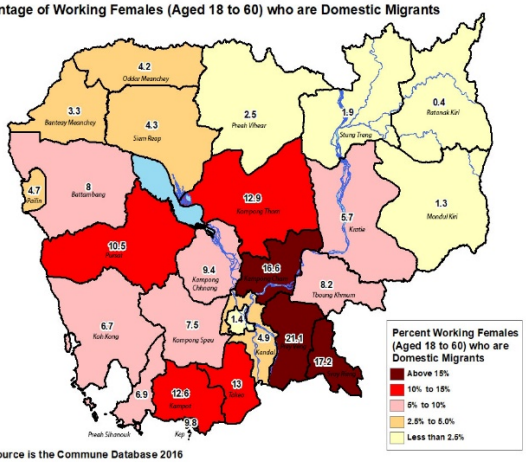


Percentage of Working Females (Aged 18 to 60) who are International Migrants



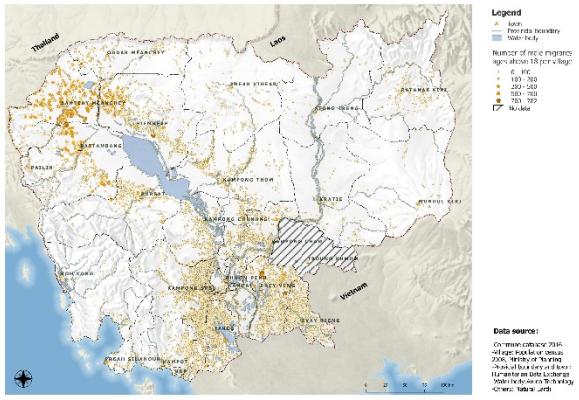
Data source is the Commune Database 2016

Percentage of Working Females (Aged 18 to 60) who are Domestic Migrants

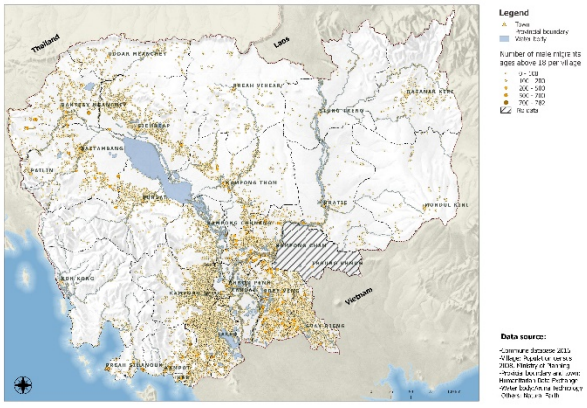


Data source is the Commune Database 2016

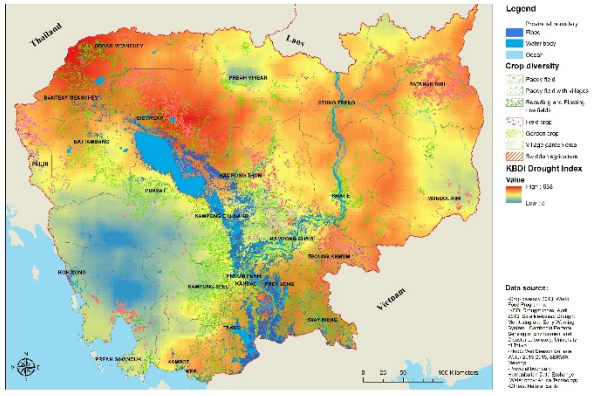
Outward international migration (Male)



Outward domestic migration (Male)

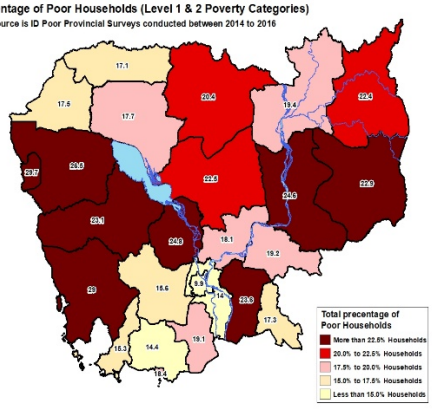


Crop failure



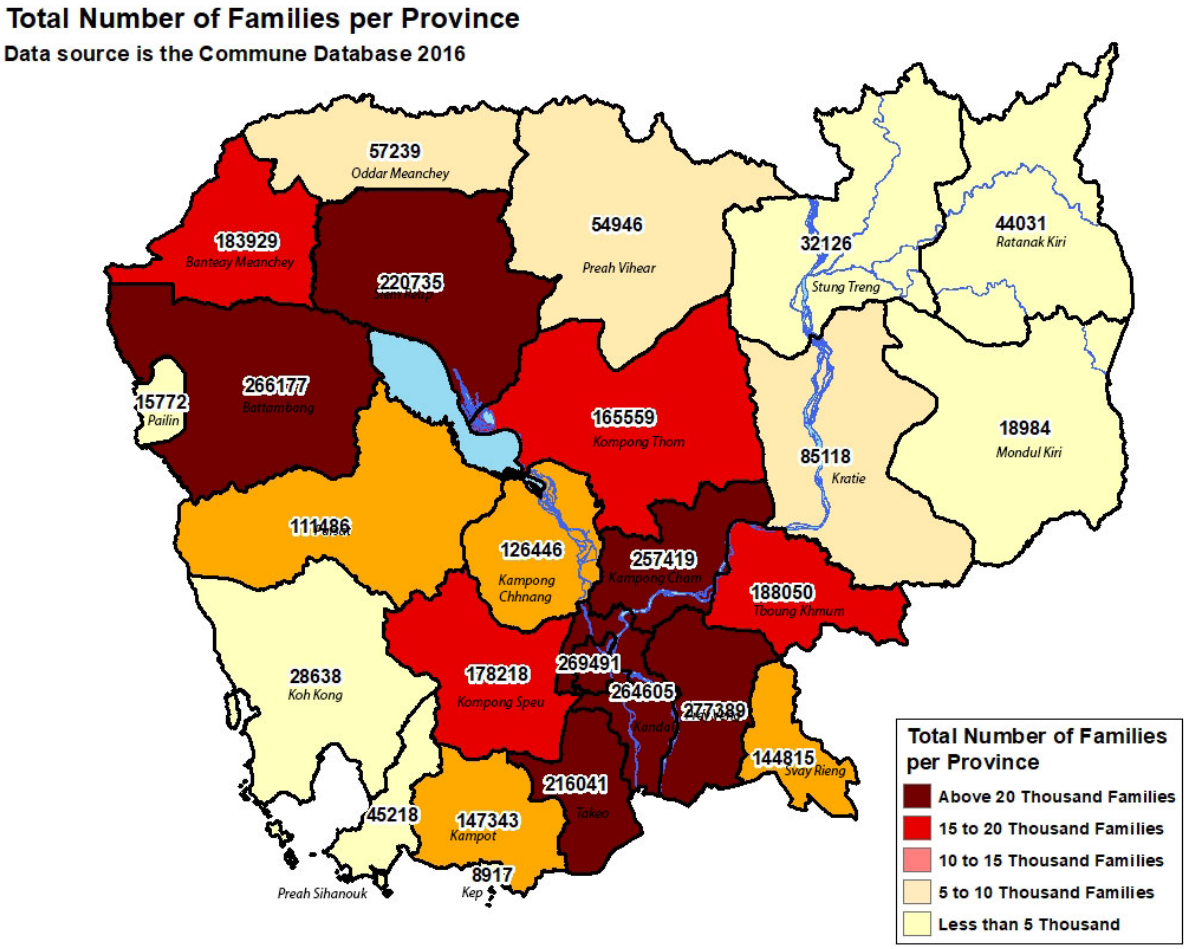
Percentage of Poor Households (Level 1 & 2 Poverty Categories)

Data source is ID Poor Provincial Surveys conducted between 2014 to 2016



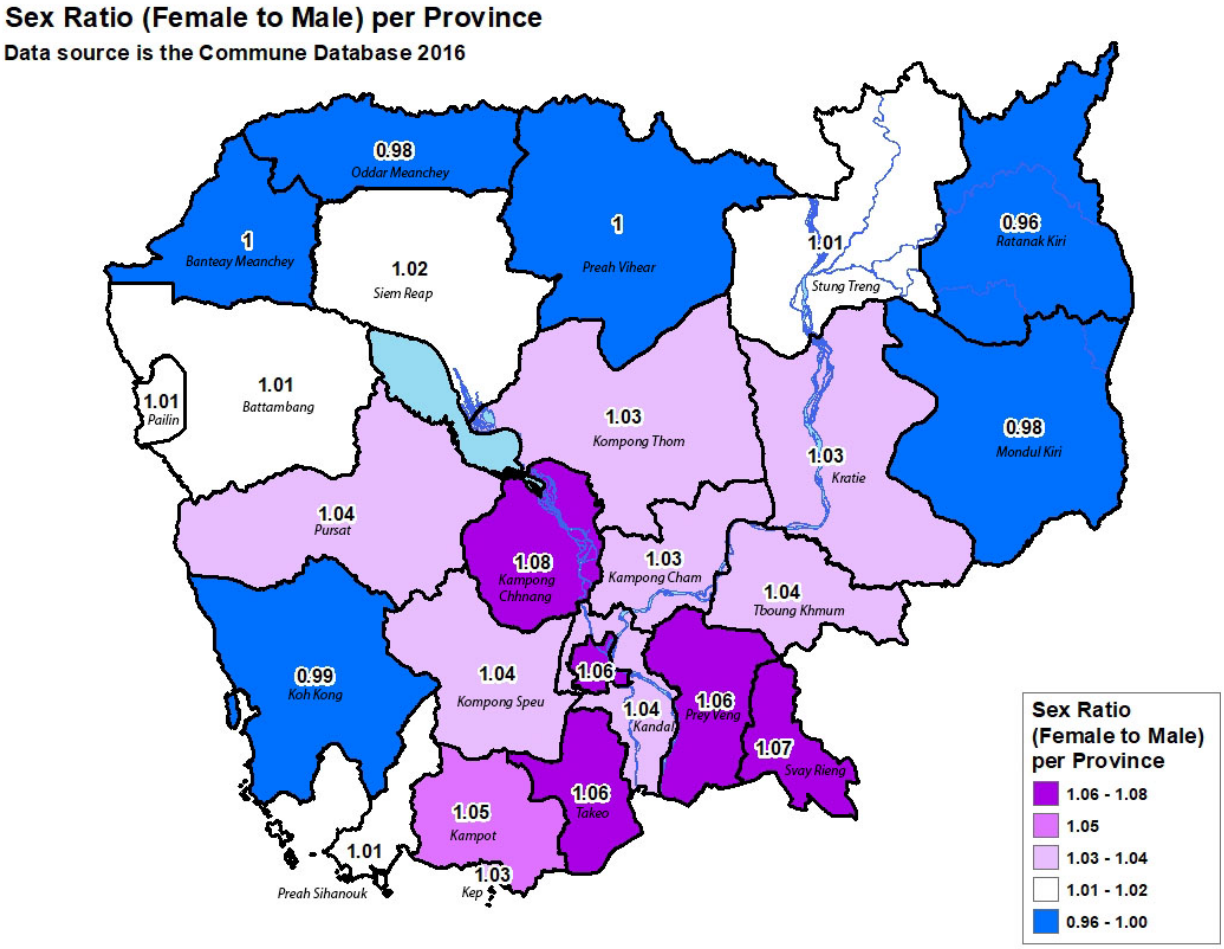
Demographics

Map 01 Total Number of Families per Province



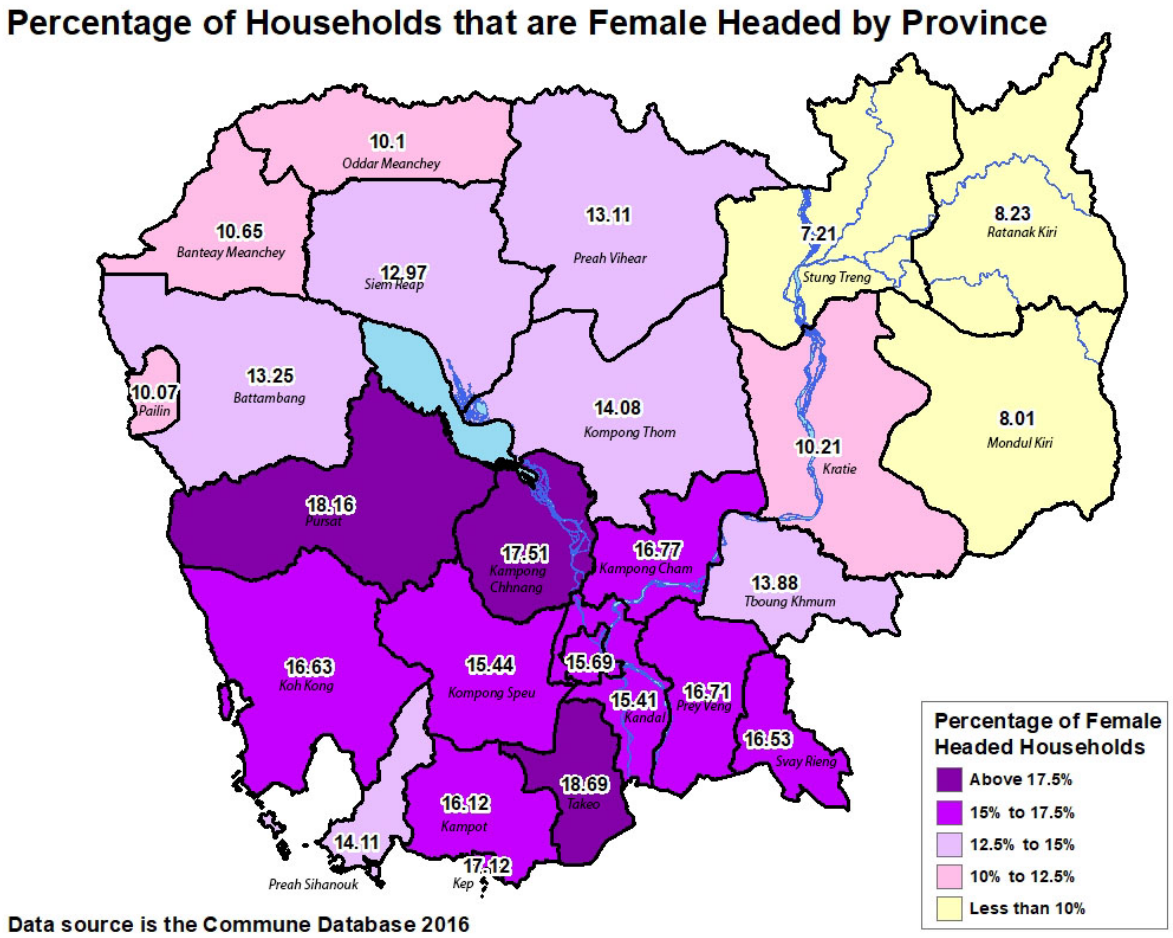
This map shows the total number of families per province. The highest population densities are clearly associated with the more important rice growing area in the flood plains of the Tonle Sap and the Lower Mekong River.

Map 02. Sex Ratio Females to Males per Province



The relatively skewed Female-to-Male Sex Ratio in some provinces is most likely caused by large-scale migration both domestic and international. For example, in Phnom Penh the higher Female ratio is most likely due to the high number of female garment and manufacturing sector workers. This also most likely is the cause of the corresponding lower Female-to-Male ratio in some border provinces due to the fact that more women than men have migrated in greater numbers than men to find employment in Phnom Penh.

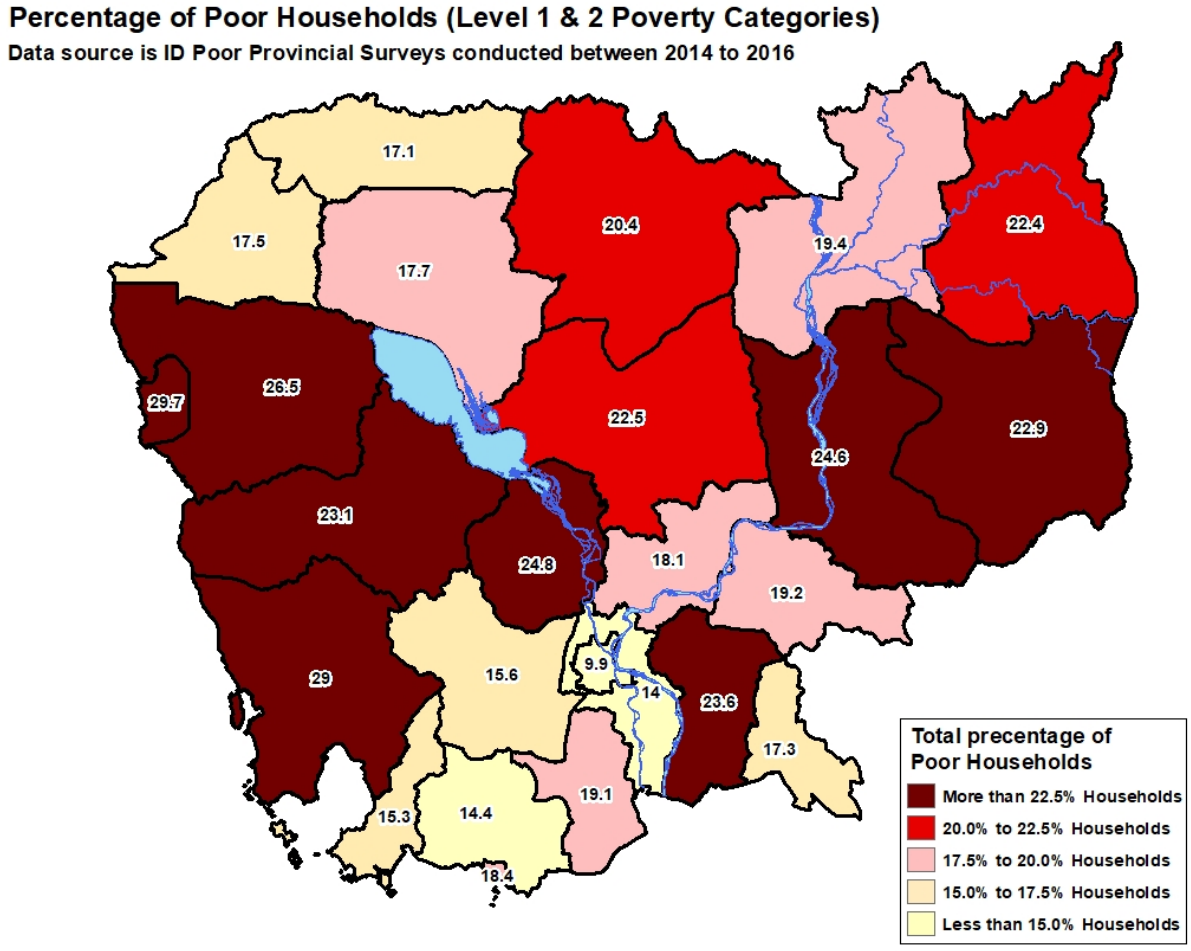
Map 03. Percentage of Female Headed Households by Province



The relatively low occurrence rate of Female Headed Households in the North-Eastern provinces is striking and may in some part reflect various cultural and traditional ethnic differences.

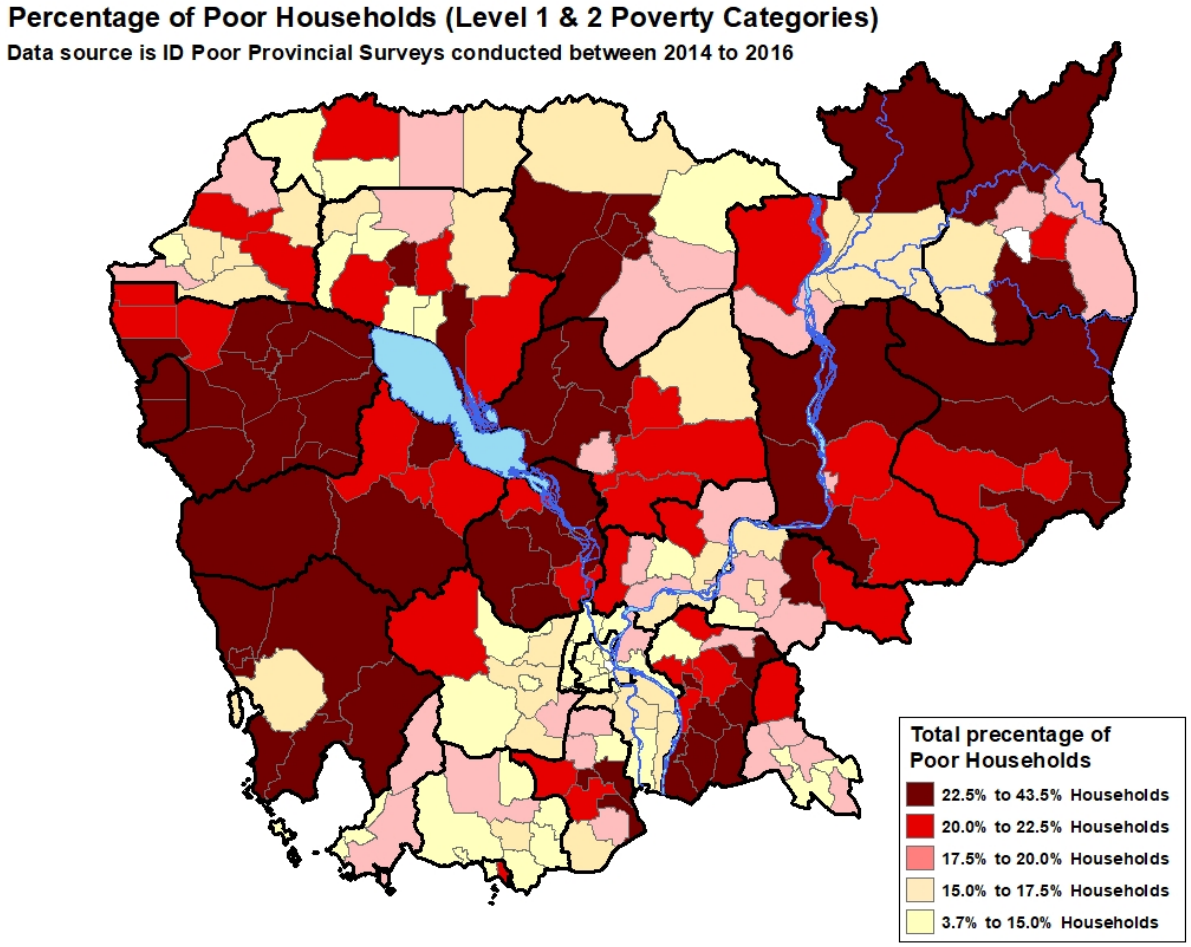
Poverty

Map 04. ID Poor - Provincial HH Percentage



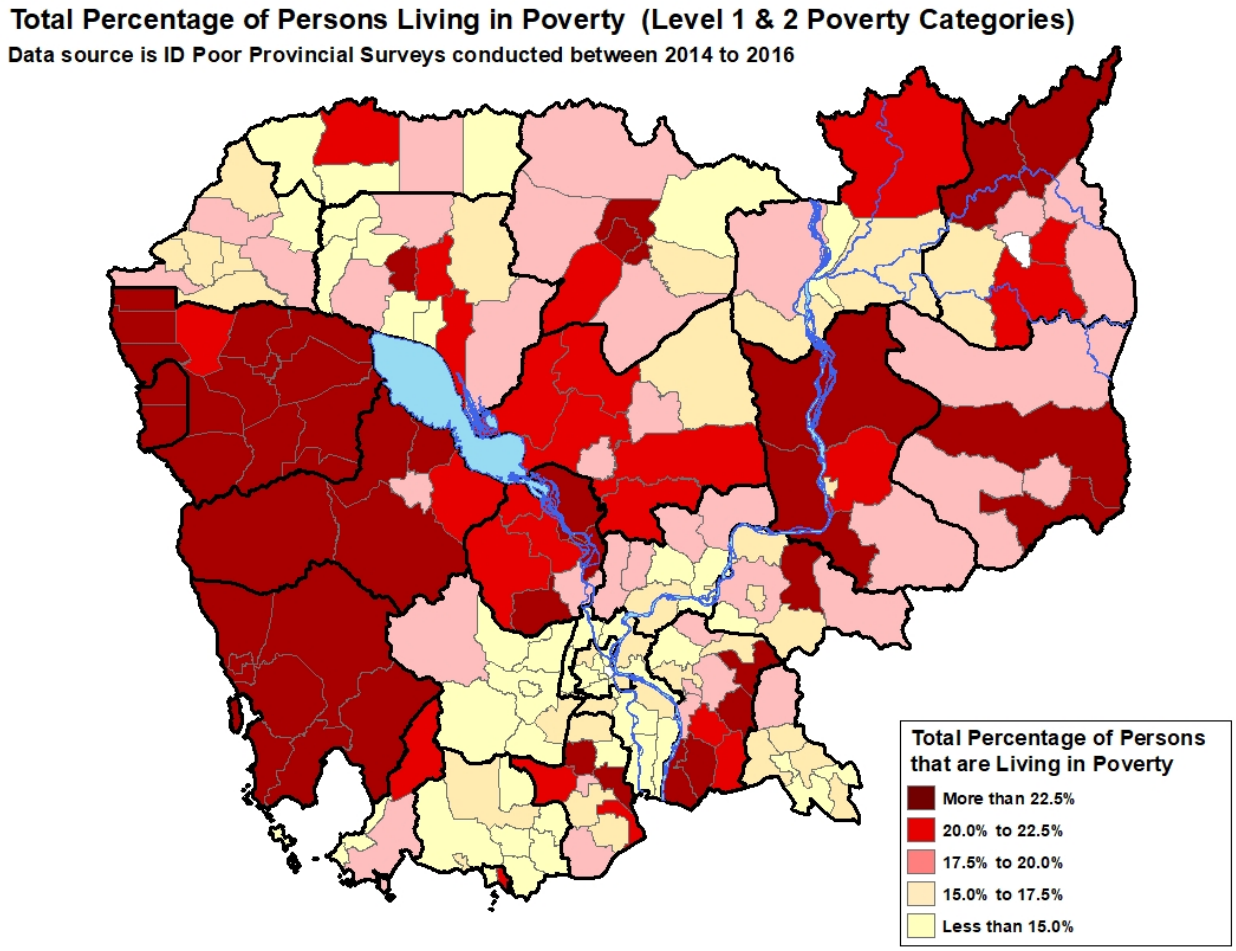
The map shows the percentage of households in each province that suffer from poverty as defined by the ID Poor survey. Koh Kong & Pailin provinces suffer the highest poverty incidence rates.

Map 05. ID Poor - District Household Percentage



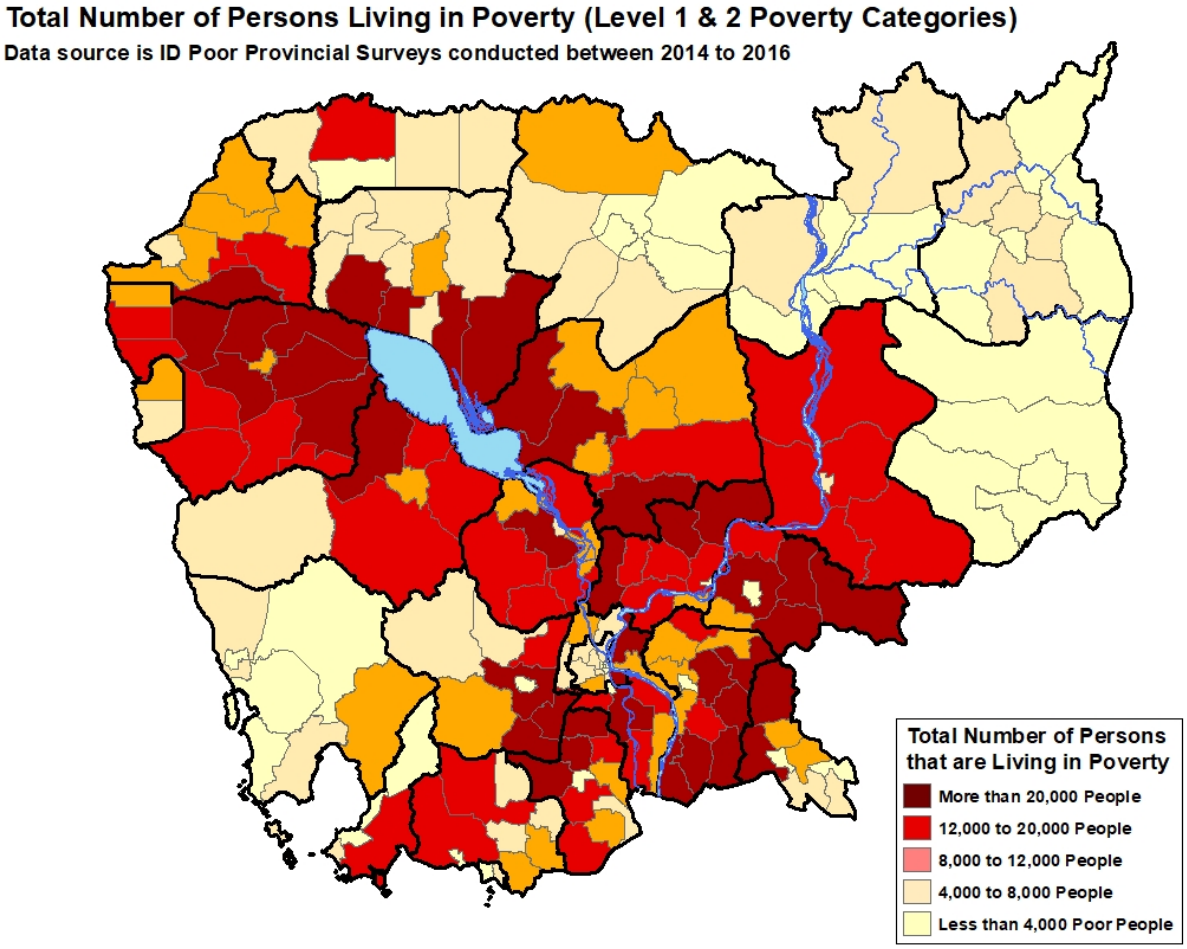
The map shows the percentage of households by district that suffer from poverty as defined by the ID Poor survey. By mapping at district level instead of provincial level a more detailed spatial pattern can be observed and it becomes clearer that often the areas that suffer the higher poverty incidence rates are also the most remote and least populated.

Map 06. ID Poor - District Population Percentage



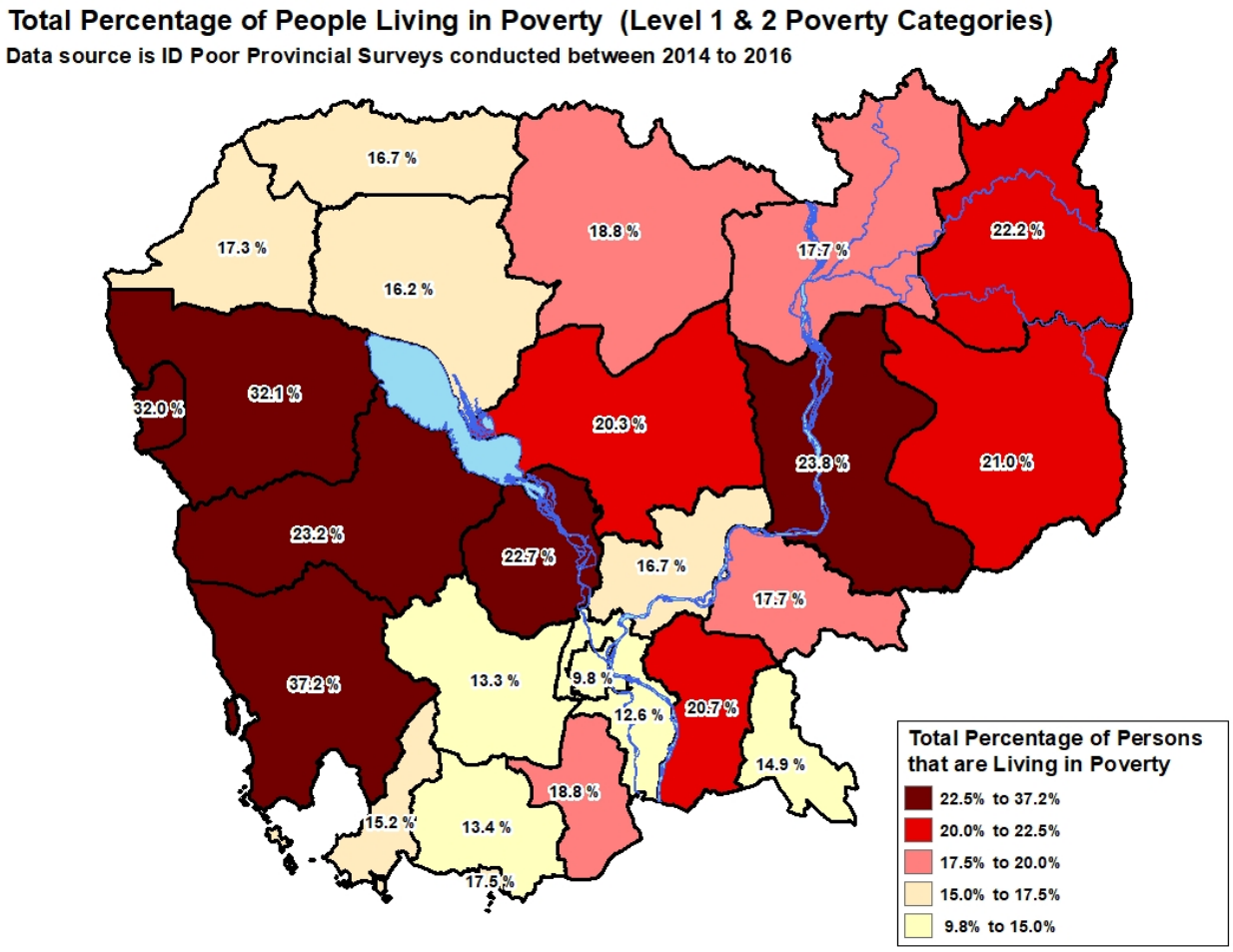
The ID Poor data can also be displayed using population percentages (as opposed to poor household incidence rates) to further explore the various spatial variations in poverty within each province and across Cambodia. Please note that showing percentages may be somewhat misleading to some viewers in that some of the larger communes that depicted as very poor are also communes with low population density.

Map 07. ID Poor - District Population Total



By simply mapping at district level the total number of persons living in poverty (as opposed to mapping a percentage poverty rate) another spatial pattern of poverty in Cambodia is revealed. Perhaps this is the “better” planning map that donors should use when deciding where to allocate and target future poverty reduction efforts.

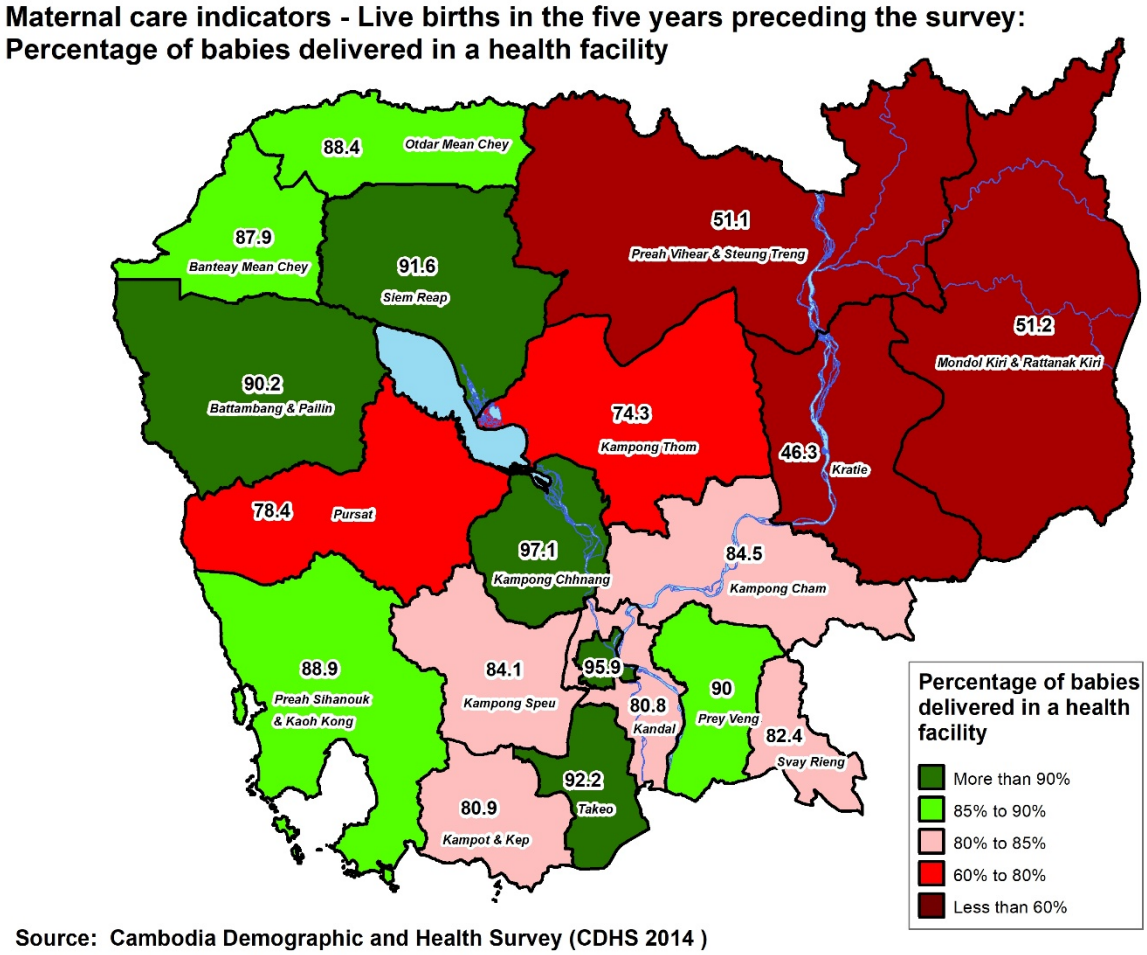
Map 08. ID Poor - Provincial Population Percentage



The map shows the total percentage of persons living in Poverty. A little surprisingly the Western provinces stand-out as a region of high poverty rates.

Maternity

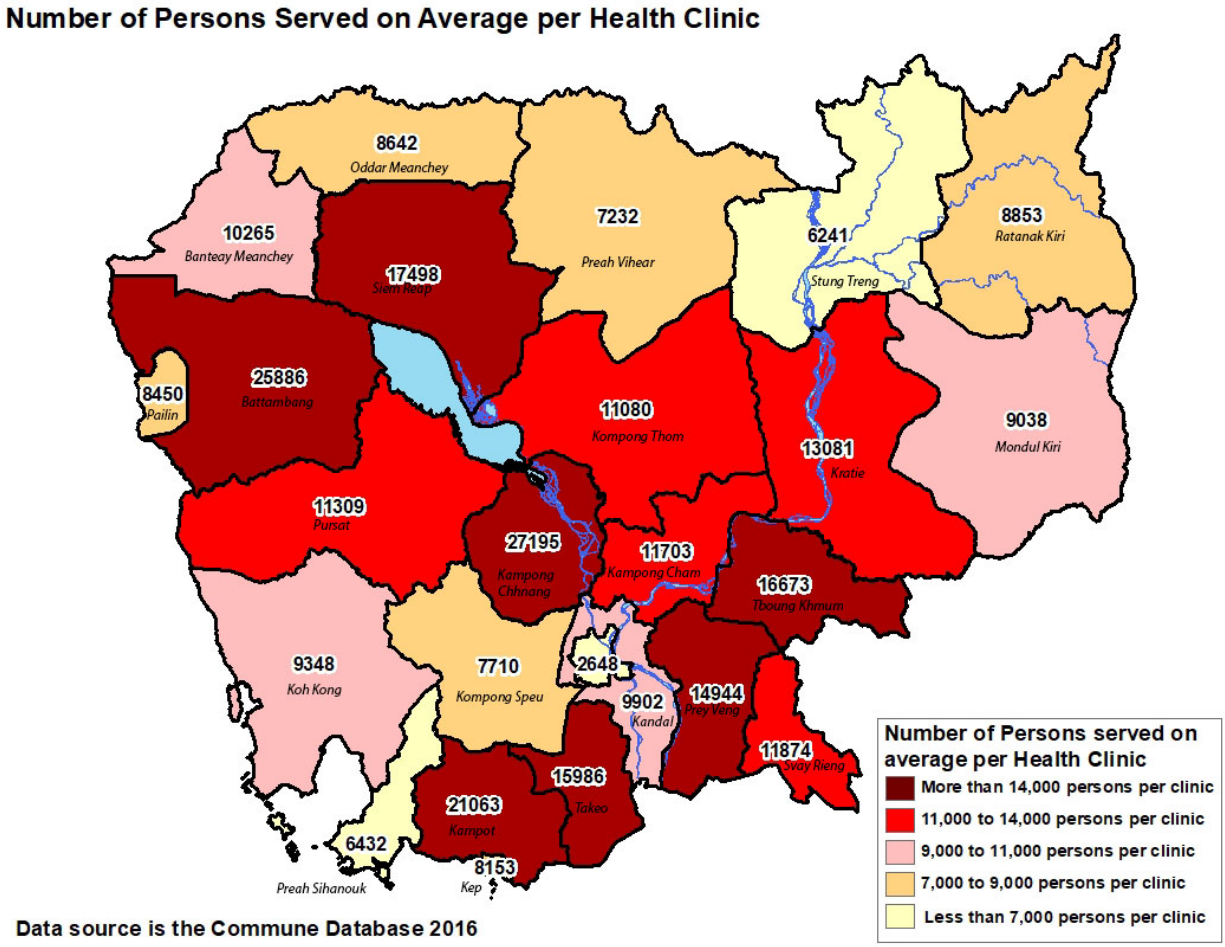
Map 09. Maternal Care - Percentage of babies delivered in a health facility



Source: Cambodia Demographic and Health Survey (CDHS 2014)

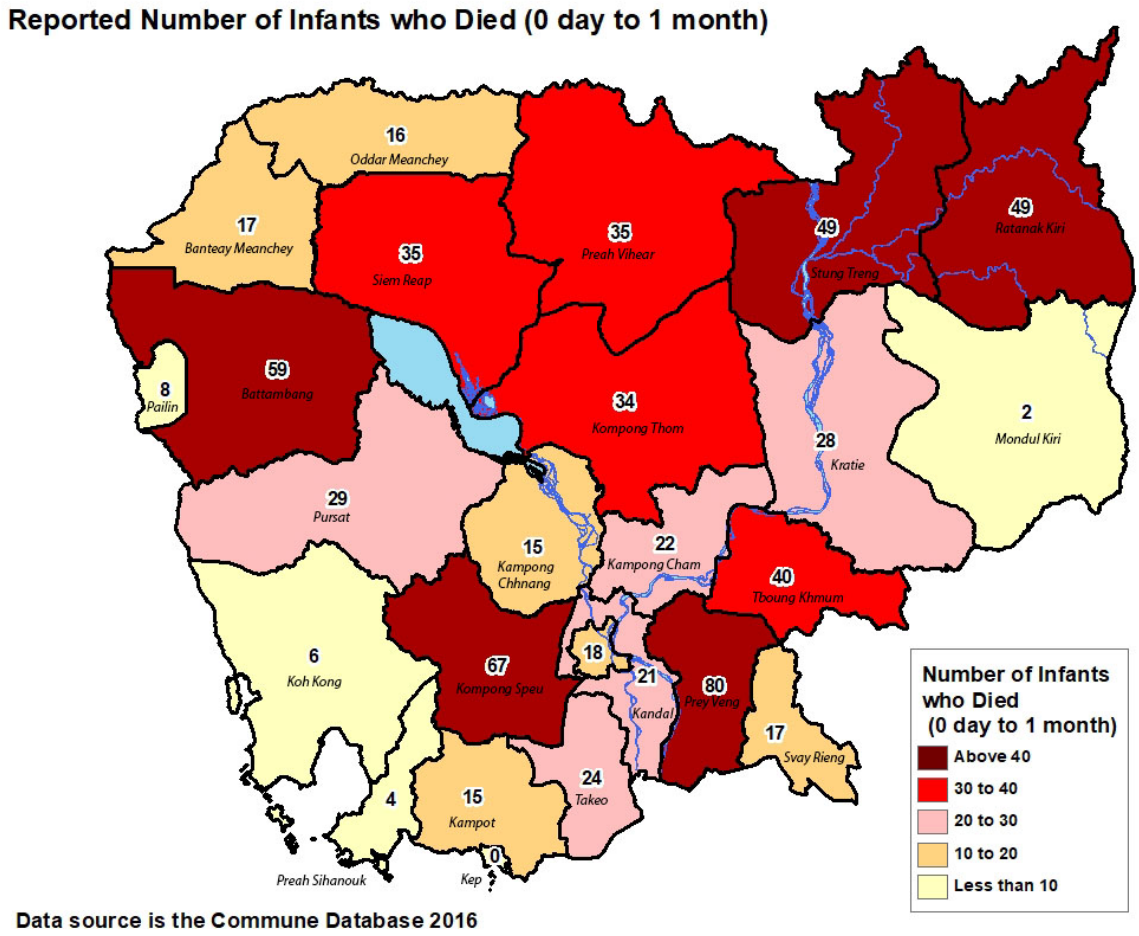
The map clearly shows the lack of access to health facilities in the four North-Eastern provinces (Preah Vihear, Stung Treng, Kratie, Mondul Kiri & Rattana Kiri). In addition, it highlights Kompong Thom and Pursat as also lacking. On the other-hand Kompong Chhnang provinces does surprisingly well in coverage.

Map 10. Number of Persons Served on Average per Health Clinic



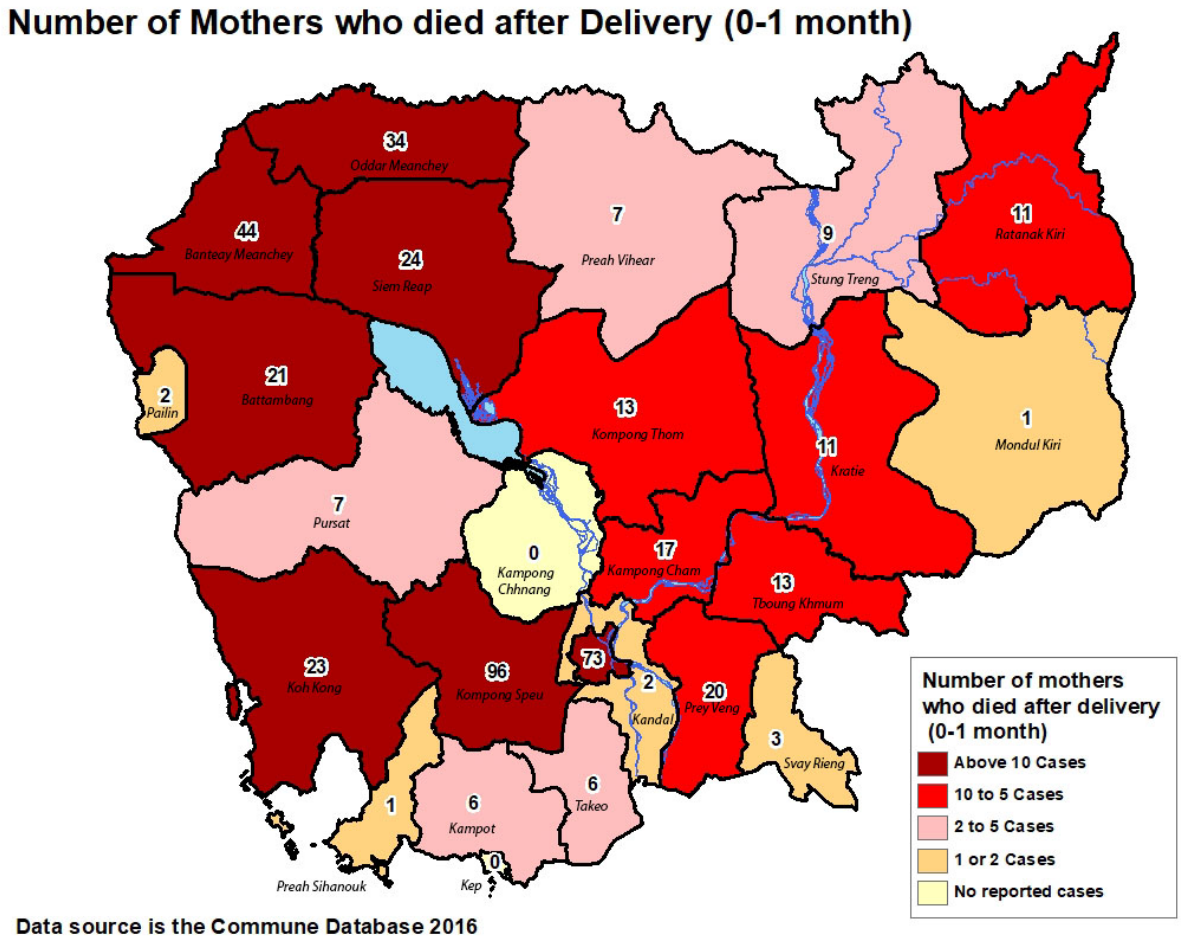
The map shows a simple calculation as follows: The total population of the province is divided by the reported number of health clinics. However, this calculation is somewhat misleading as patients in some provinces may be much more likely to go direct to large hospitals and not use smaller health clinics at all when sick.

Map 11. Number of infants who died (0 day to 1 month)



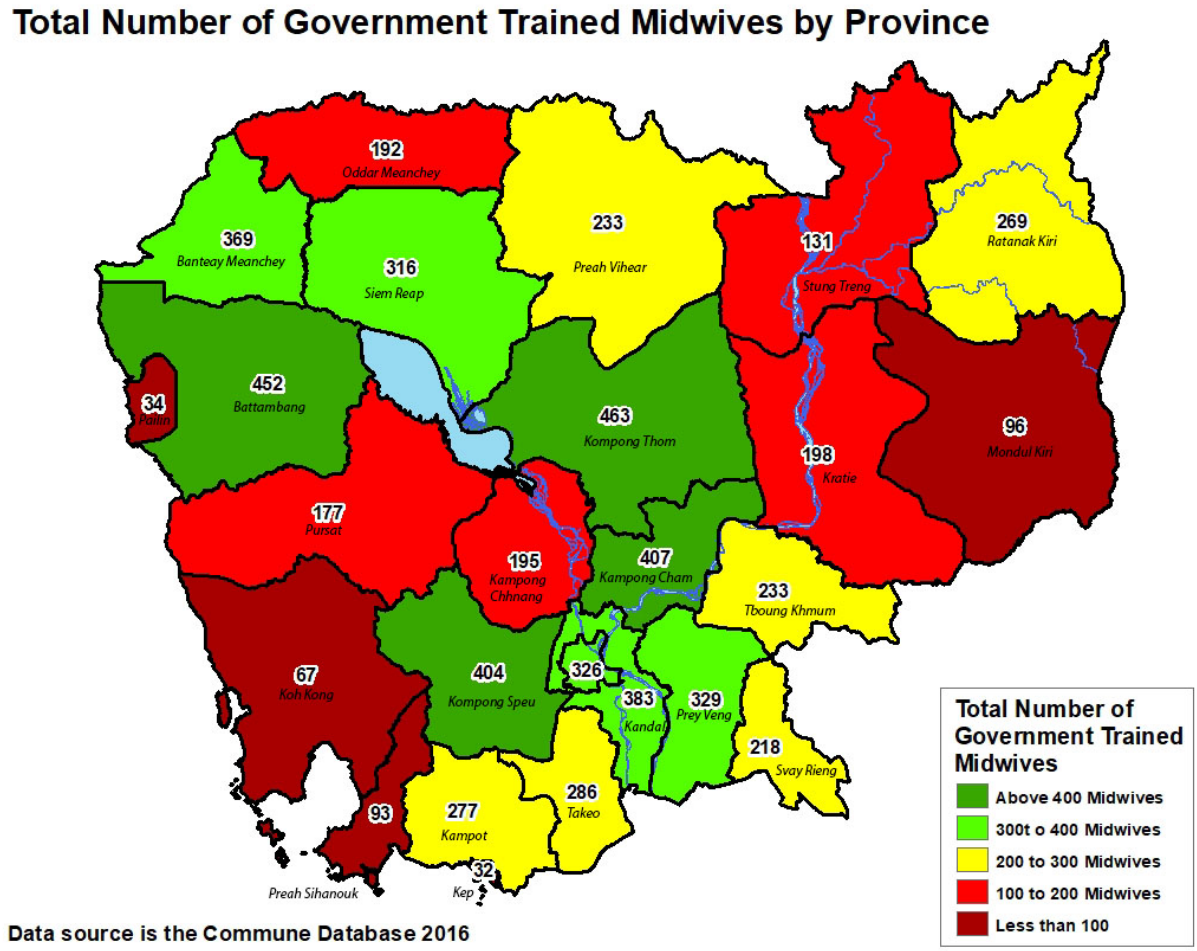
The map shows total numbers of infant mortality cases per province. There may well be significant under-reporting. Sadly, Prey Veng records the highest number of cases.

Map 12. Number of mothers who died after delivery



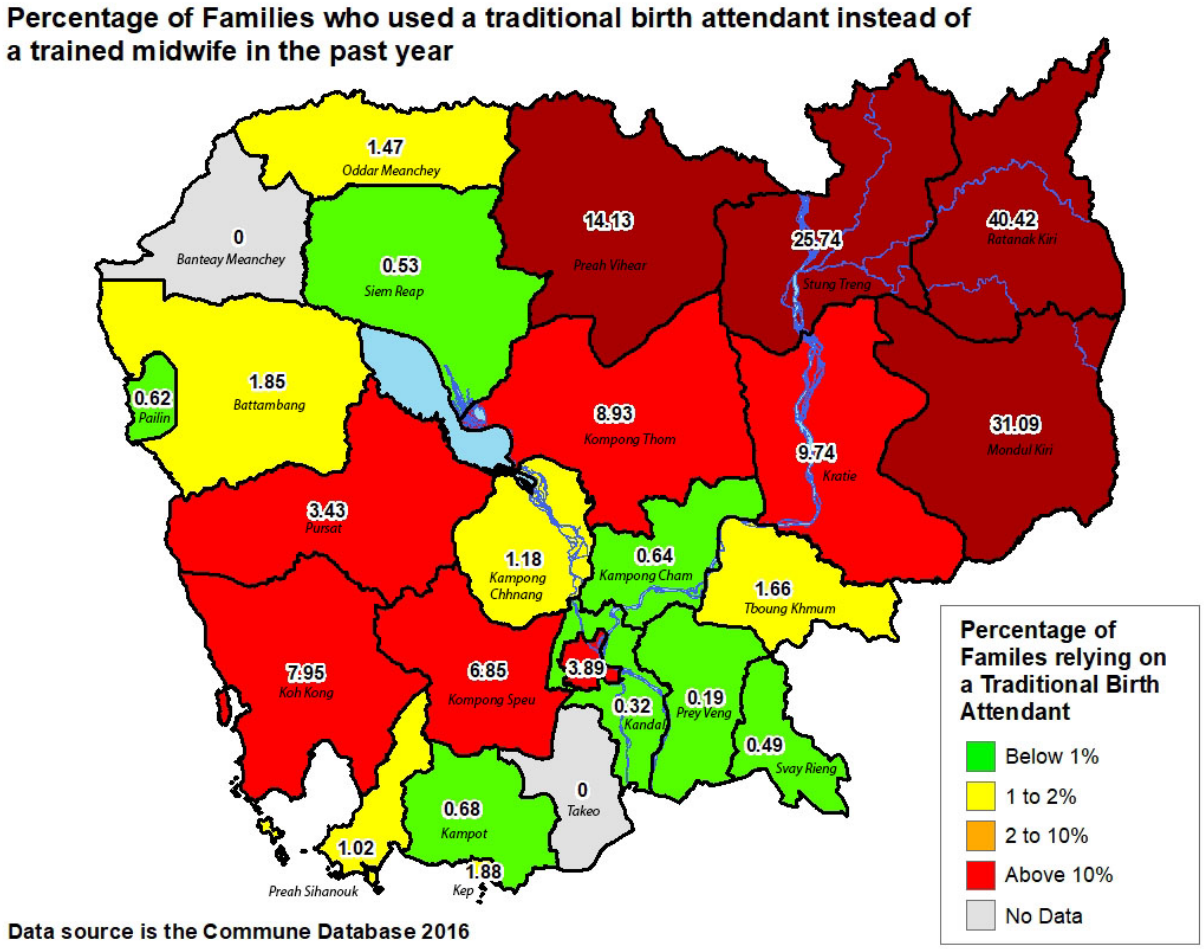
The map shows the number of maternal mortality cases. There may well be significant issues with under-reporting. Sadly, Kompong Speu province records the highest total number of cases.

Map 13. Total Number of Government Trained Midwives by Province



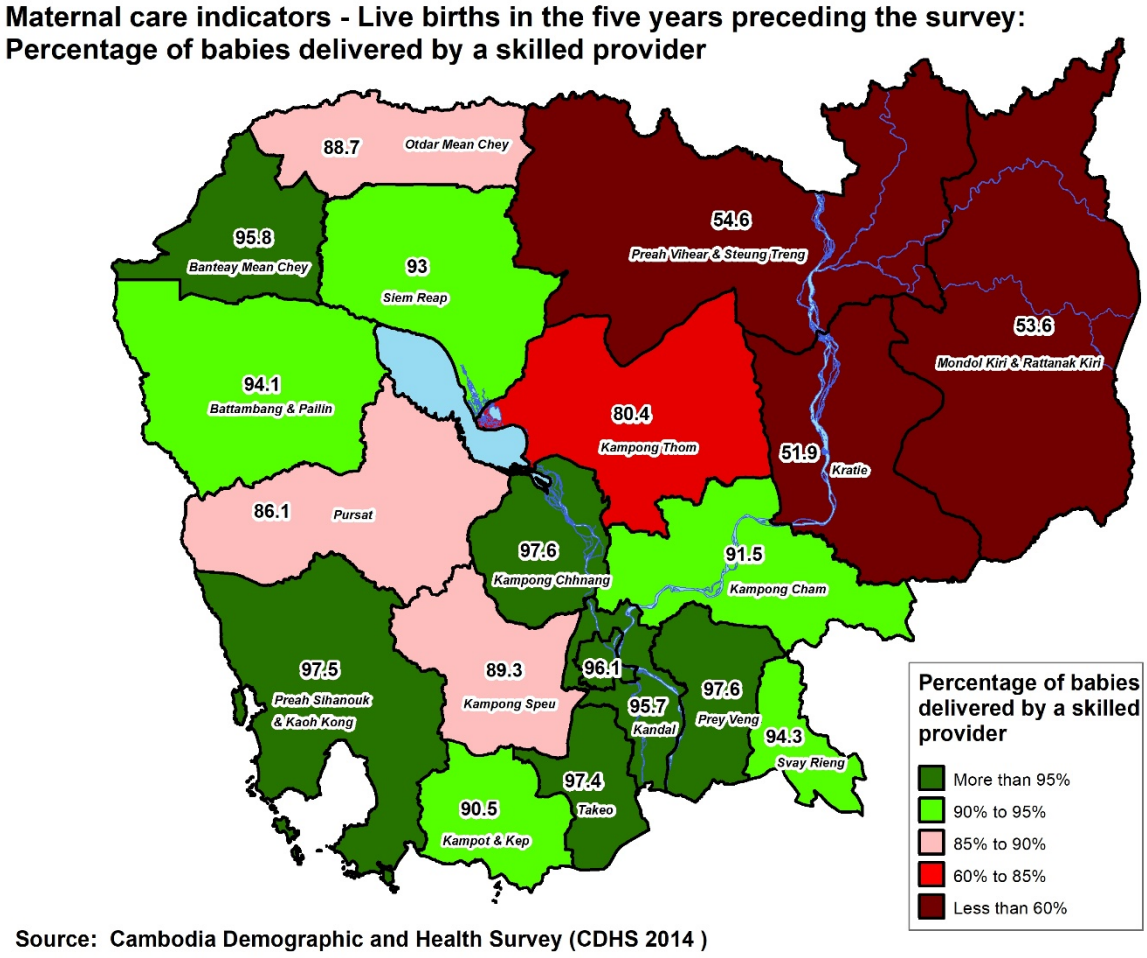
The map shows total number of Government trained mid-wives. Surprisingly, Kompong Thom province has the most.

Map 14. Traditional Birth Attendant vs Trained Midwife



The map clearly shows provinces in North-western Cambodia still rely most heavily on traditional birth attendants (as opposed to trained midwives).

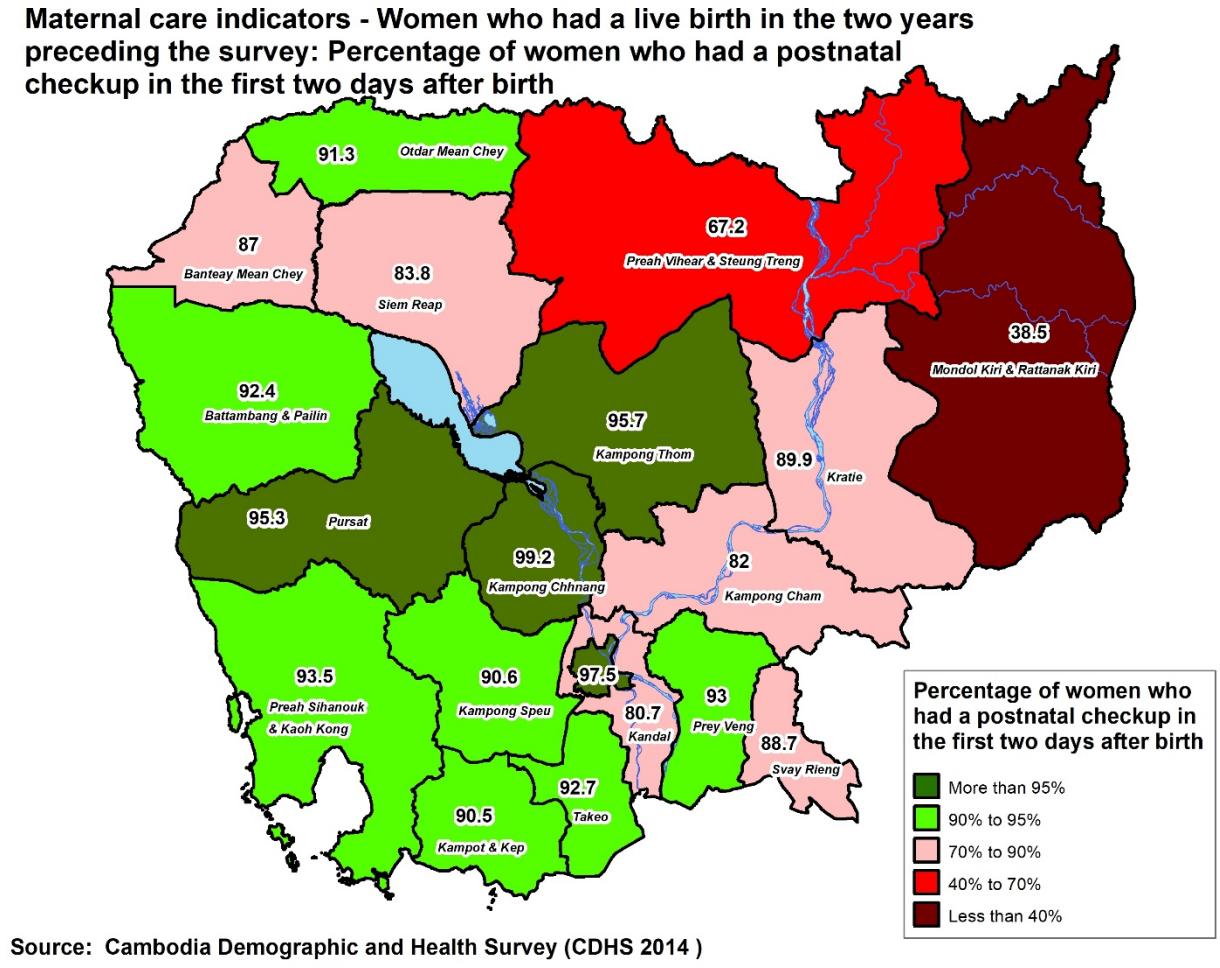
Map 15. Maternal Care - Percentage of babies delivered by a skilled provider



Source: Cambodia Demographic and Health Survey (CDHS 2014)

Again the map clearly shows a lack of trained midwives in North-Eastern Cambodia where barely more than half of all births were attended by a skilled provider.

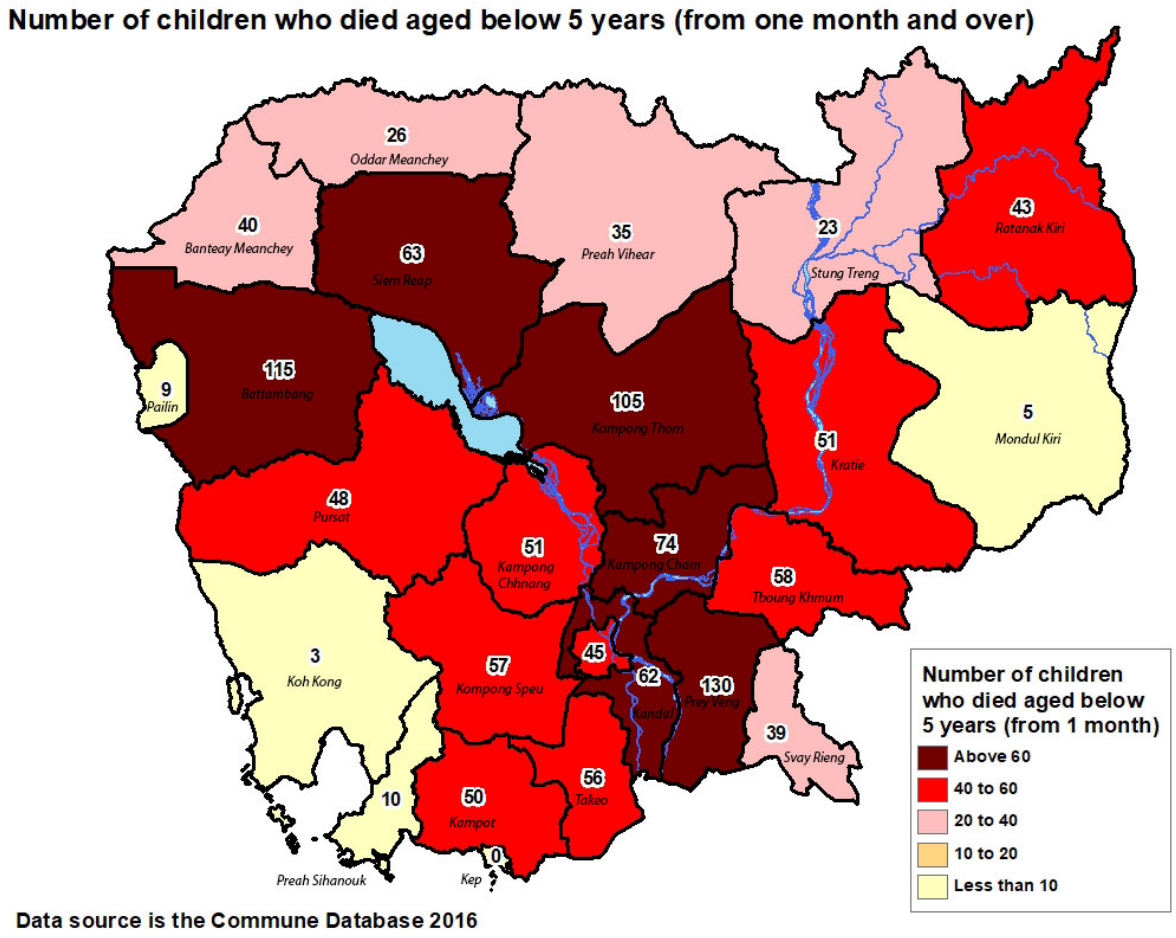
Map 16. Maternal Care - Postnatal Checkup



Source: Cambodia Demographic and Health Survey (CDHS 2014)

The map again shows the lack of maternal care available in Mondol Kiri and Rattanak Kiri provinces.

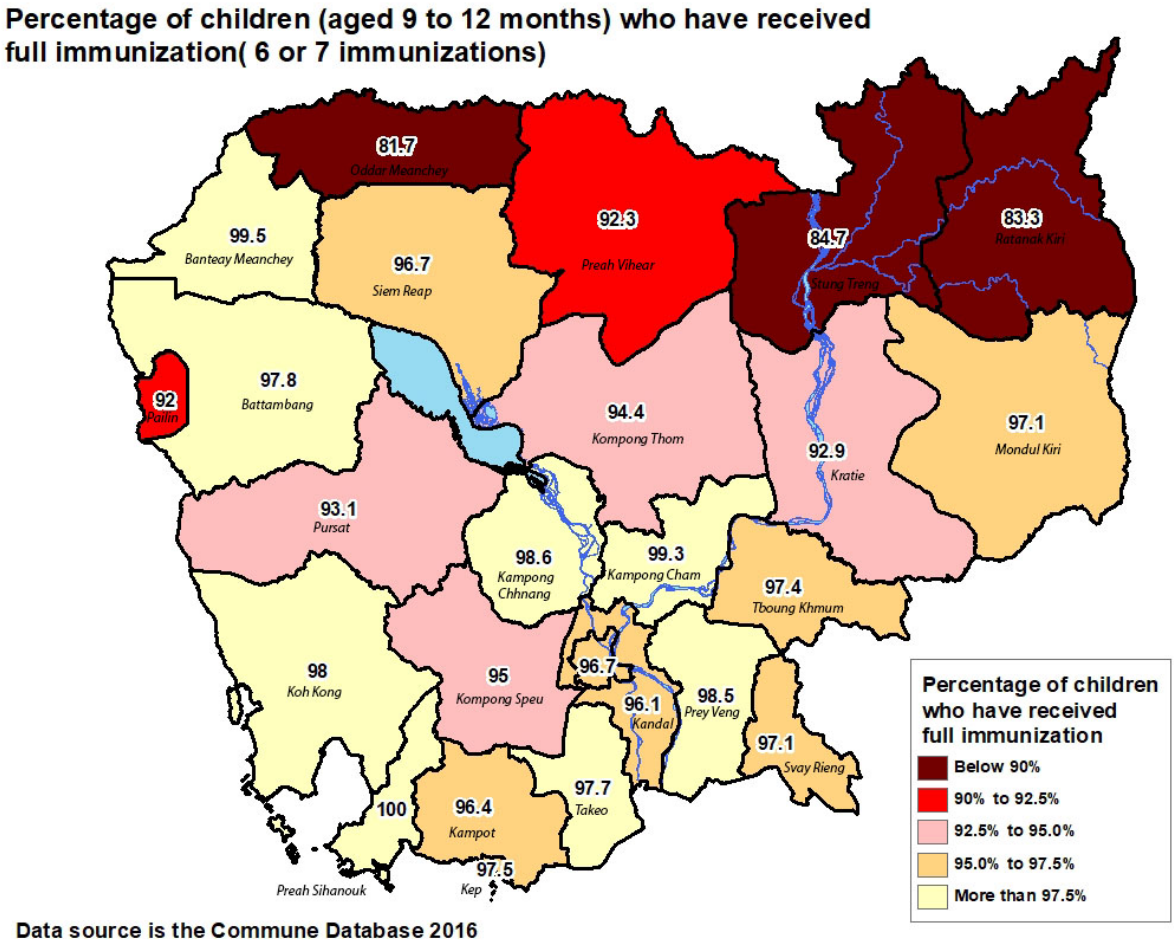
Map 17. Number of children who died aged below 5 years



The map shows total child mortality cases by province. Sadly, Prey Veng province records the highest number of cases.

Vaccinations

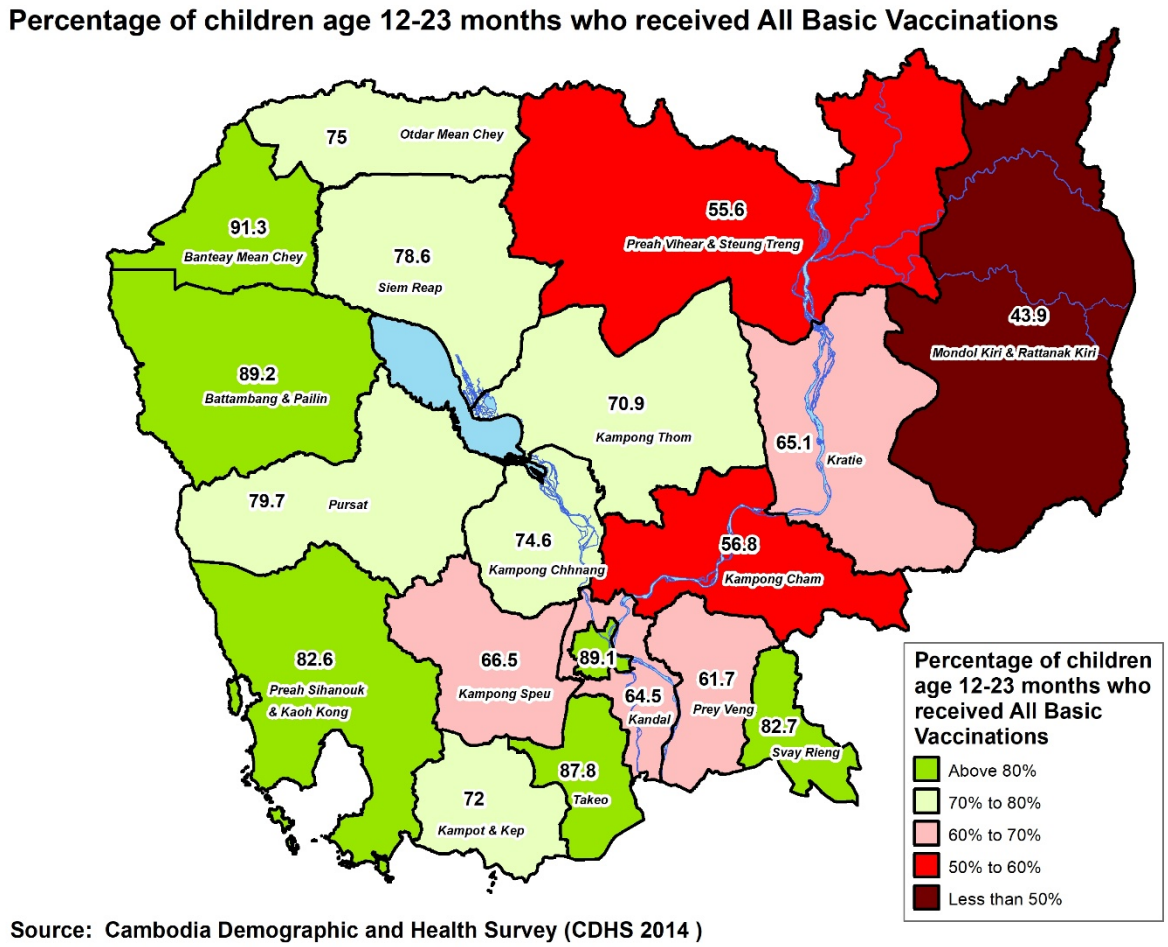
Map 18. Percentage of children who have received full immunization



Data source is the Commune Database 2016

The map shows that immunization rates are lowest in the Northern border provinces of Oddar Meanchey, Stung Treng and Rattanak Kiri.

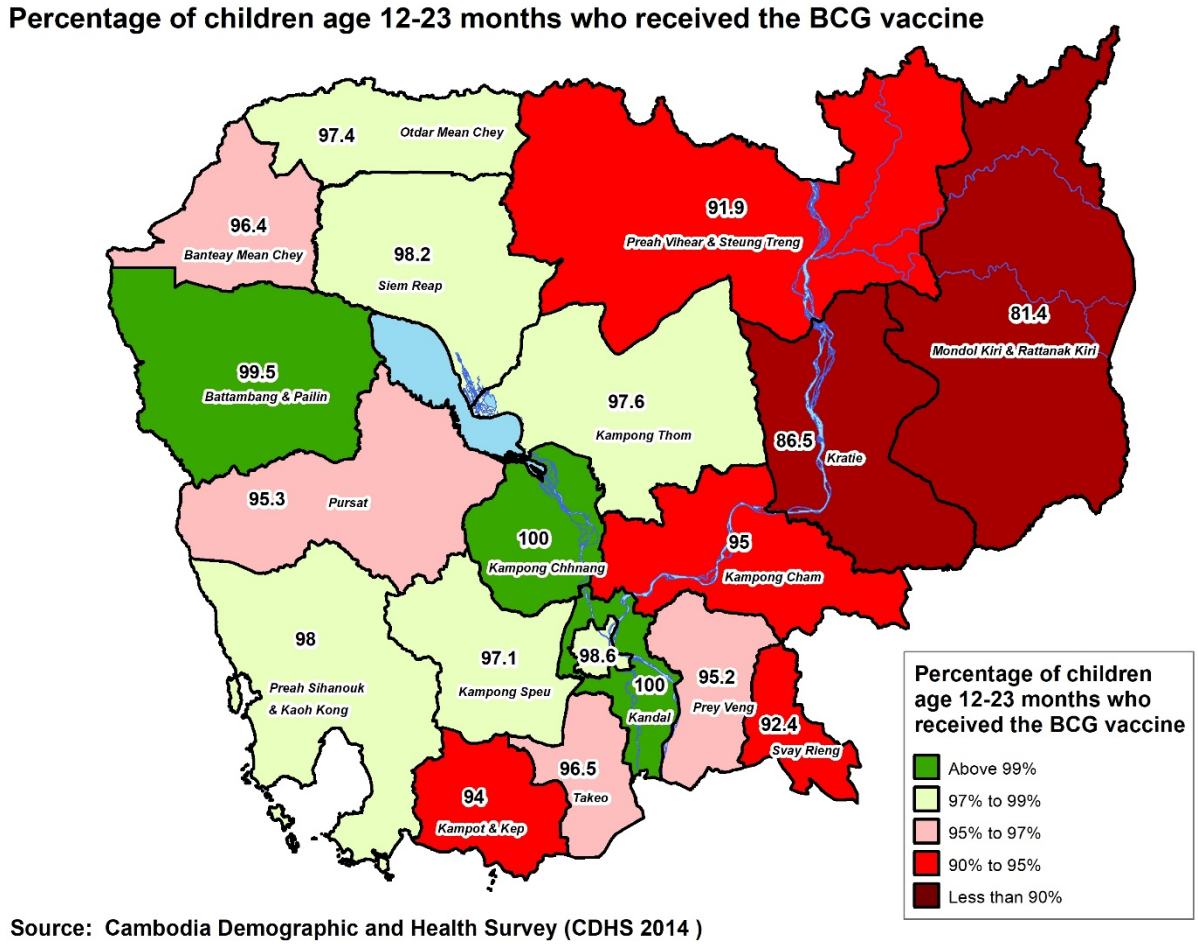
Map 19. Vaccine – All Basic Vaccinations



Source: Cambodia Demographic and Health Survey (CDHS 2014)

The map shows that in Mondol Kiri and Ratana Kiri less than half of all children receive the full set of basic vaccinations.

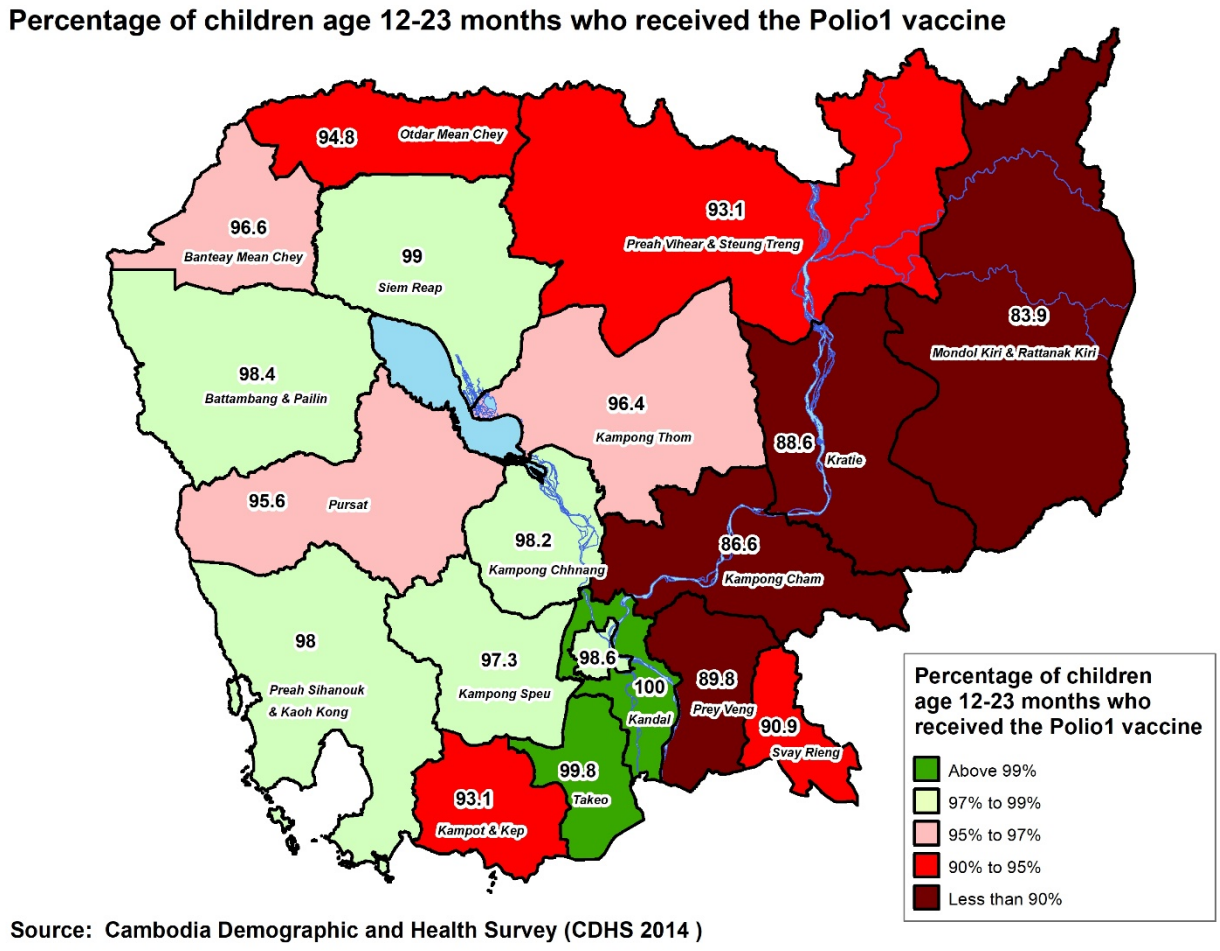
Map 20. Vaccine (BCG)



Source: Cambodia Demographic and Health Survey (CDHS 2014)

The map shows that in North-Eastern Cambodia a significant percentage of children are not receiving even the basic BCG vaccination.

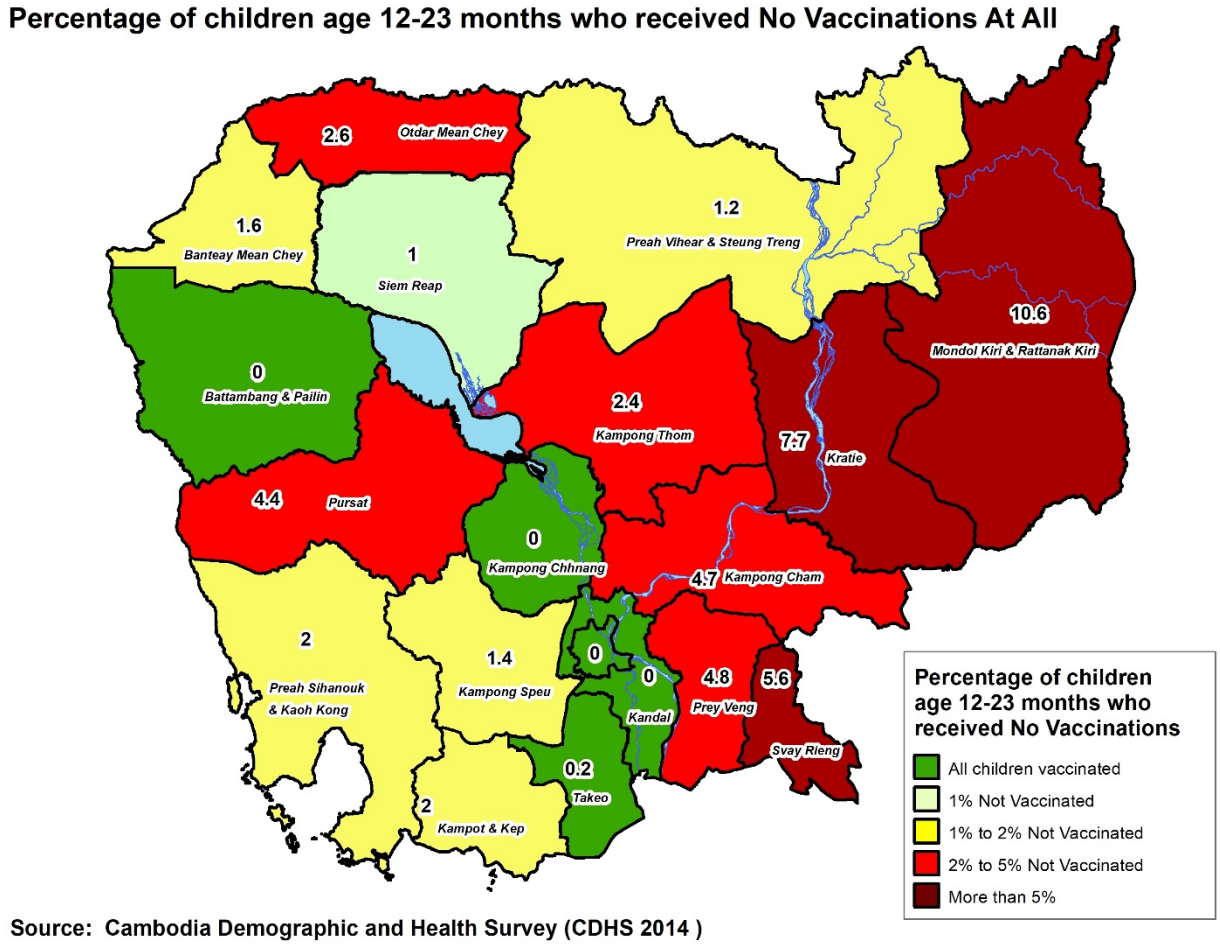
Map 21. Vaccine (Polio1)



Source: Cambodia Demographic and Health Survey (CDHS 2014)

The map shows that in Eastern Cambodia a significant percentage of children are not receiving even the basic Polio1 vaccination.

Map 22. Vaccine – No Vaccination

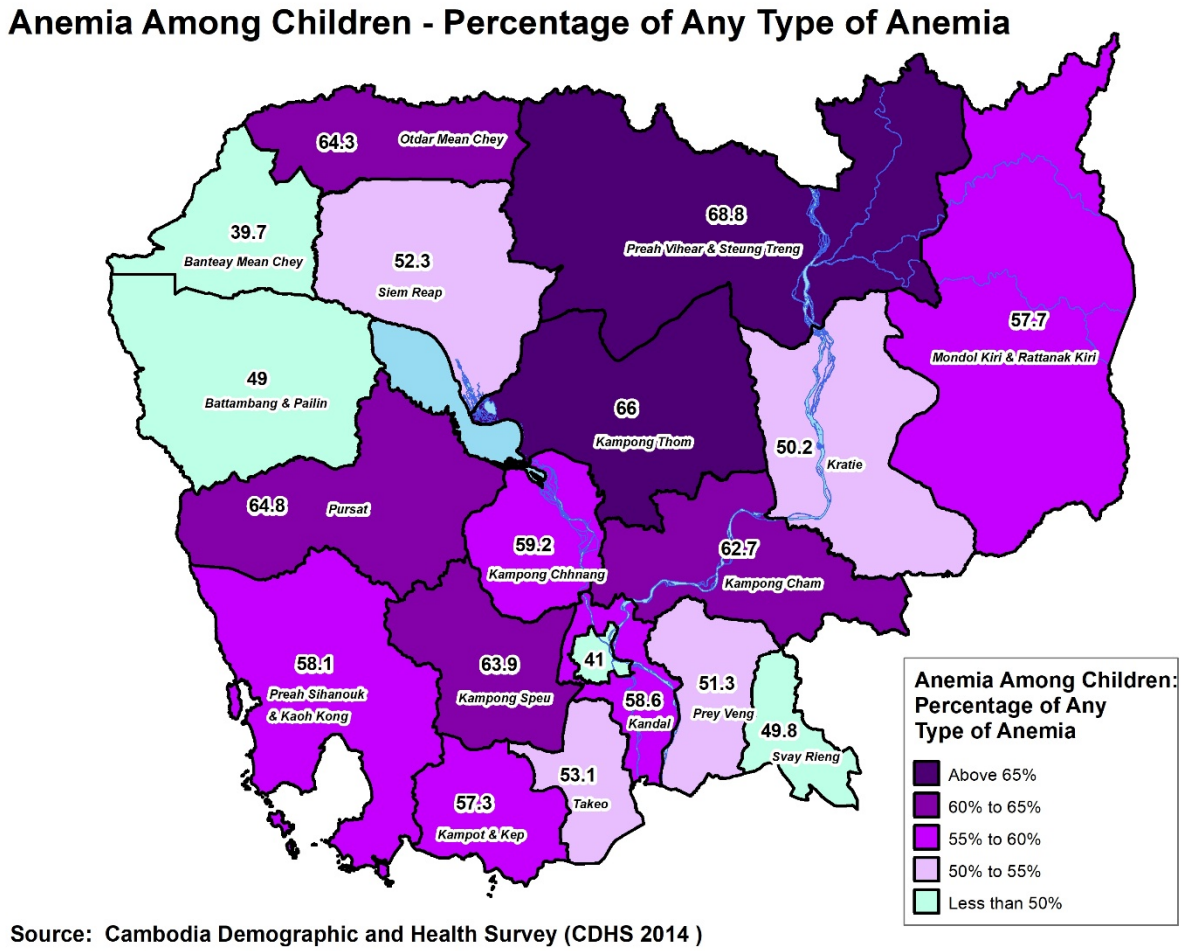


Source: Cambodia Demographic and Health Survey (CDHS 2014)

The map shows that in Eastern Cambodia a significant percentage of children (up to and above 10%) are not receiving any vaccinations at all.

Anemia

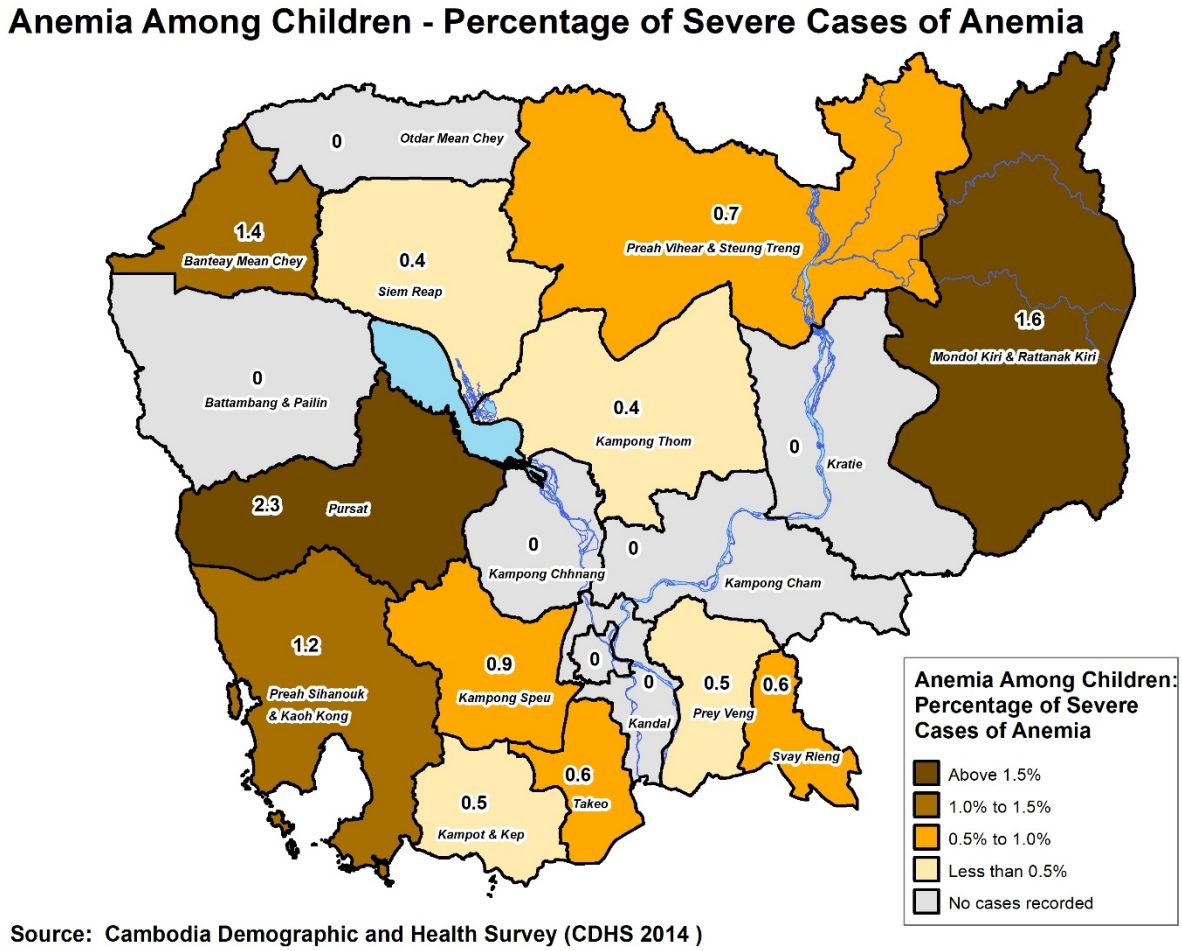
Map 23. Anemia -Children Any



Source: Cambodia Demographic and Health Survey (CDHS 2014)

Rates of Anemia are good indictors of malnutrition. High rates of anemia amongst children are indicated in Kompong Thom, Preah Vihear and Steung Treng Provinces.

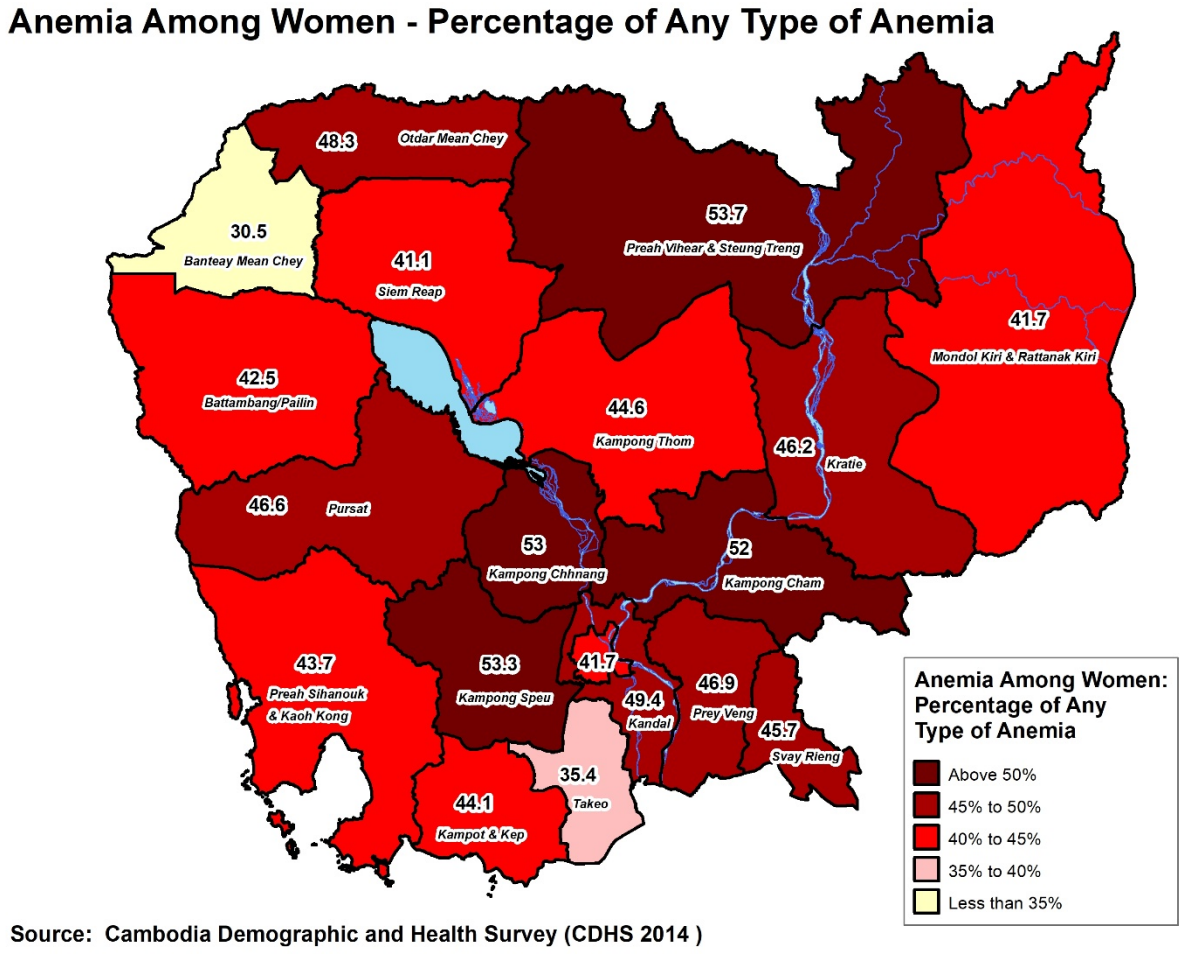
Map 24. Anemia -Children Severe



Source: Cambodia Demographic and Health Survey (CDHS 2014)

Rates of Anemia are good indictors of malnutrition. This map shows the rate of **Severe** Anemia among children. High rates of anemia amongst children are indicated Pursat, Mondol Kiri & Rattanak Kiri Provinces.

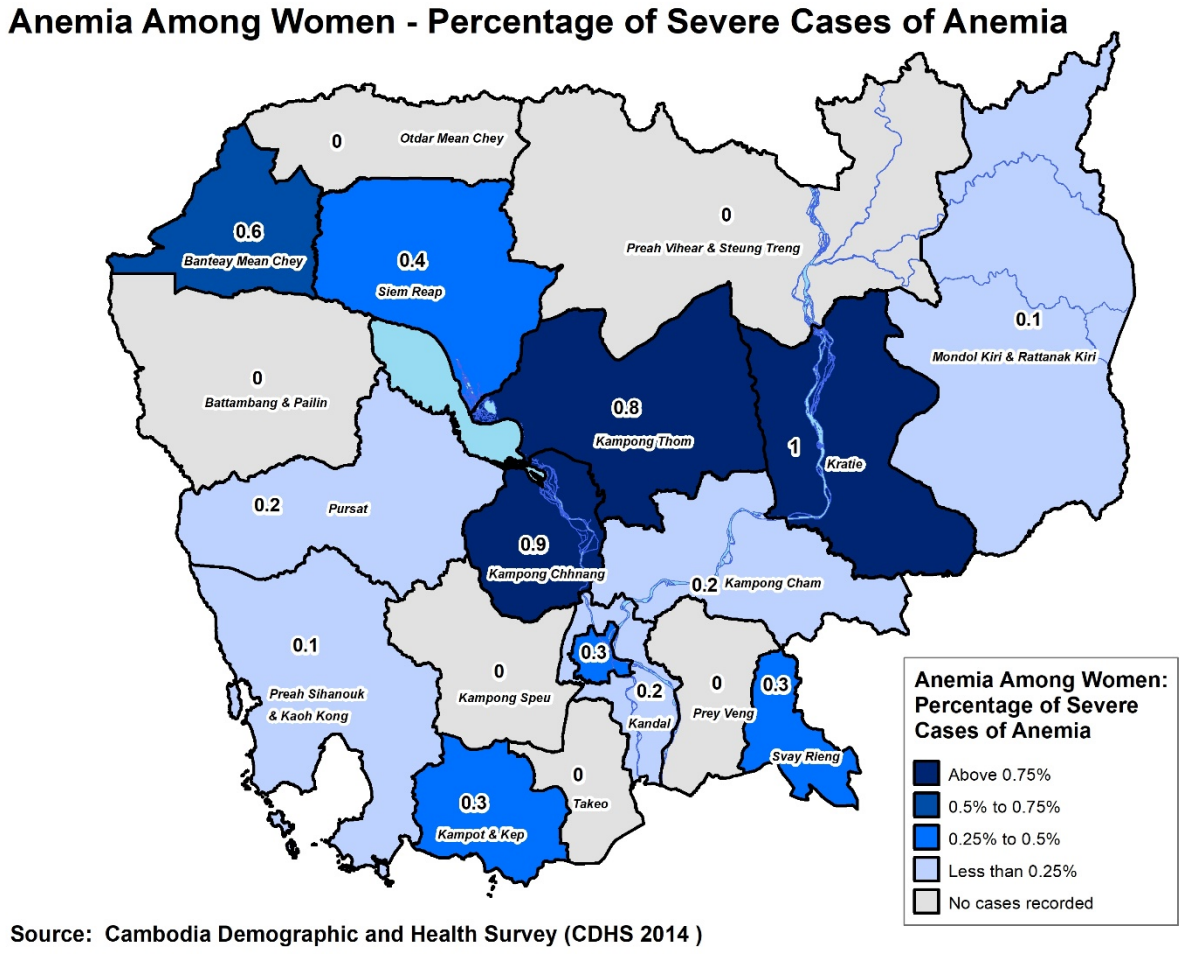
Map 25. Anemia -Women Any



Source: Cambodia Demographic and Health Survey (CDHS 2014)

High rates of Anemia is often an indicator of malnutrition or poor health. Relatively high rates of anemia among women are indicated in Kompong Thom, Kompong Chhnang, Kompong Cham & Kompong Speu Provinces.

Map 26. Anemia -Women Severe

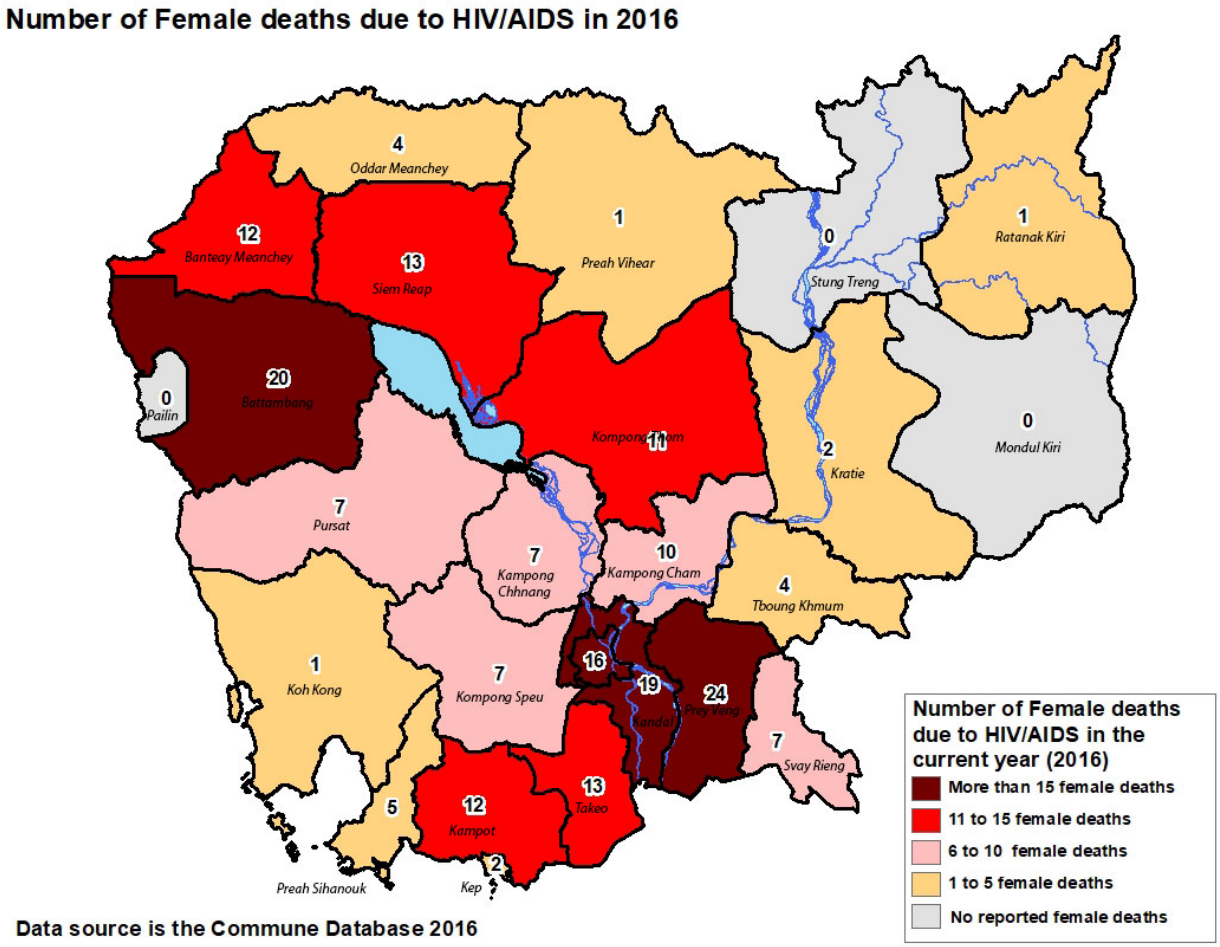


Source: Cambodia Demographic and Health Survey (CDHS 2014)

High rates of Anemia is often an indicator of malnutrition or poor health. Relatively high rates of **severe** anemia among women are indicated in Kompong Thom, Kompong Chhnang, & Kratie Provinces.

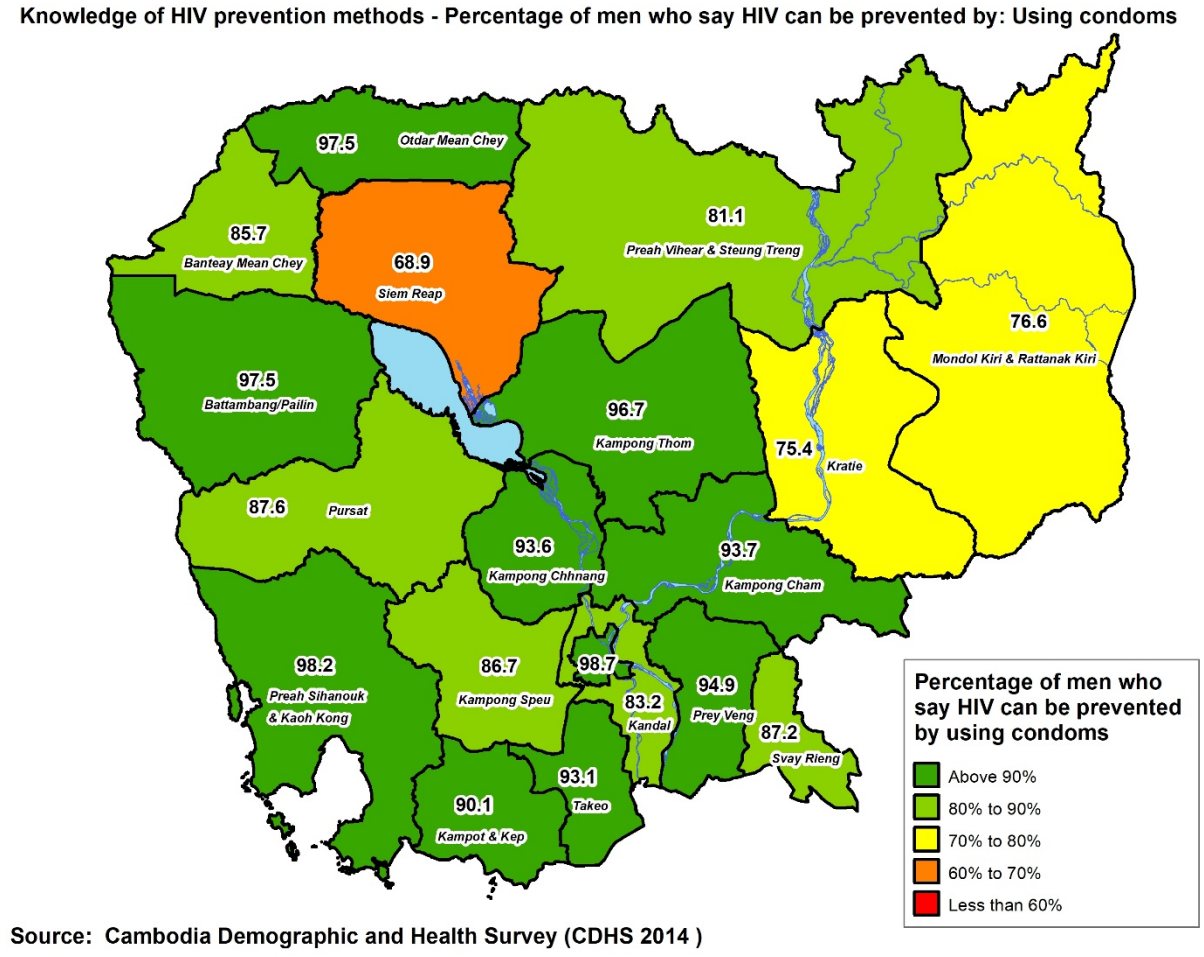
HIV

Map 27. Number of Female deaths due to HIV



The map shows total number of female deaths due to HIV. It is likely that there is significant under-reporting. The highest number of reported deaths is in Prey Veng Province.

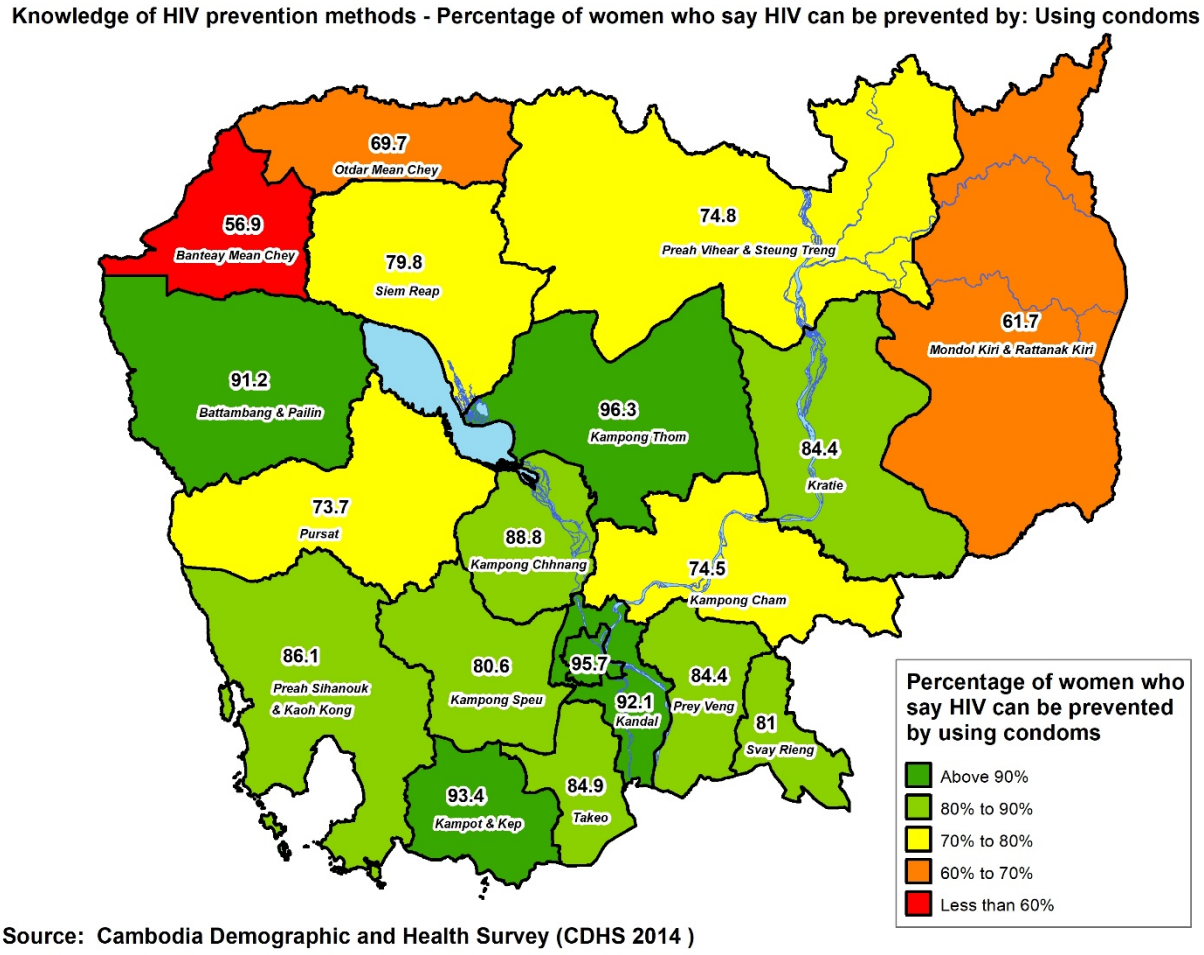
Map 28. HIV condom knowledge men



Source: Cambodia Demographic and Health Survey (CDHS 2014)

While knowledge regarding the use of condoms to prevent HIV is relatively high in most provinces it is somewhat surprising that Siem Reap province scores so low. This is particularly worrying considering that the province is a major global tourist destination with a large associated entertainment sector with related HIV risks.

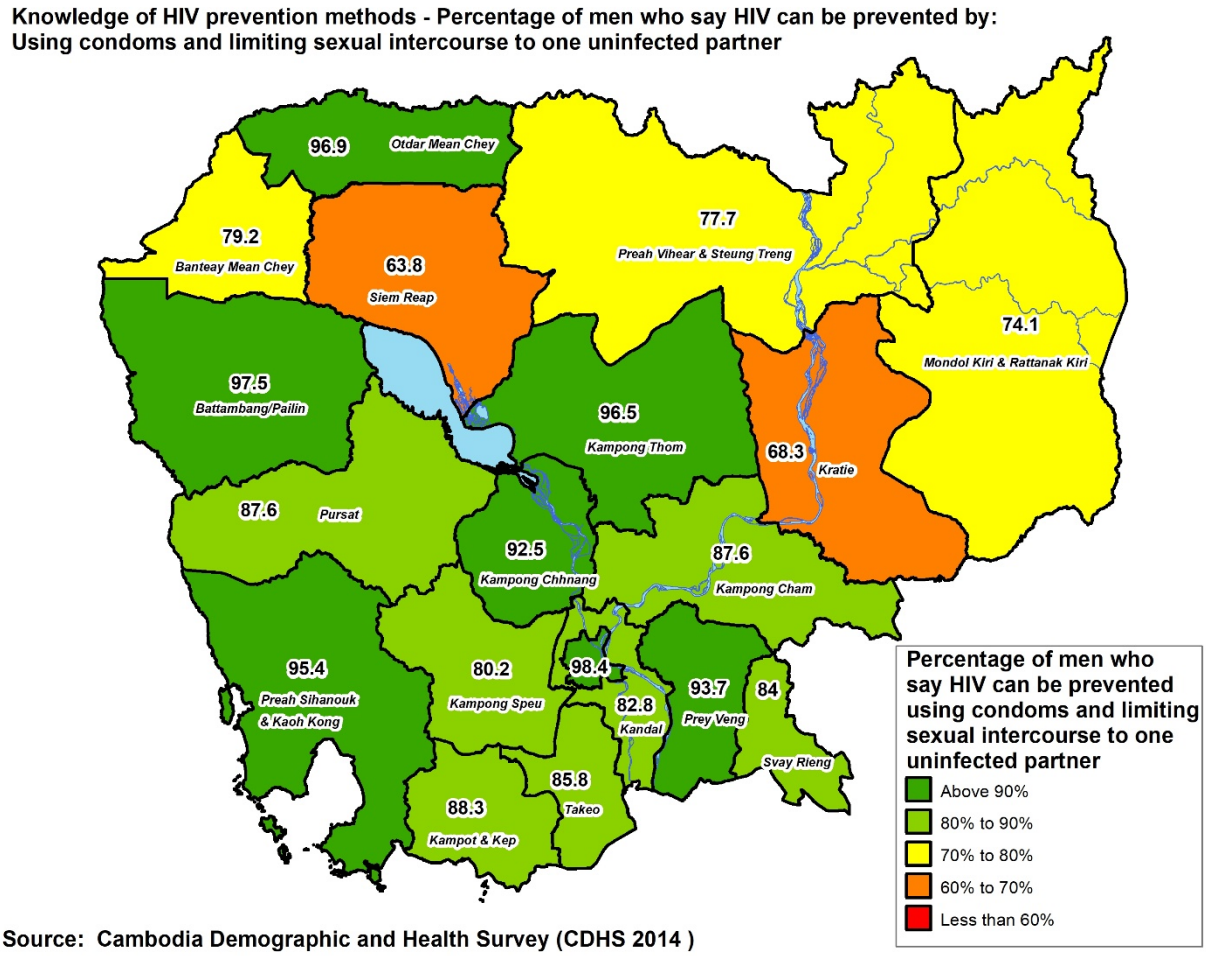
Map 29. HIV condom knowledge women



Source: Cambodia Demographic and Health Survey (CDHS 2014)

The low knowledge score regarding condom use for HIV prevention in Banteay Mean Chey province is striking and may be due to the high number of transient migrant women in towns like Poipet. The presence of casinos and related entertainment establishments in Poipet is an additional cause for concern and most likely should be addressed by prioritizing further public awareness raising campaigns.

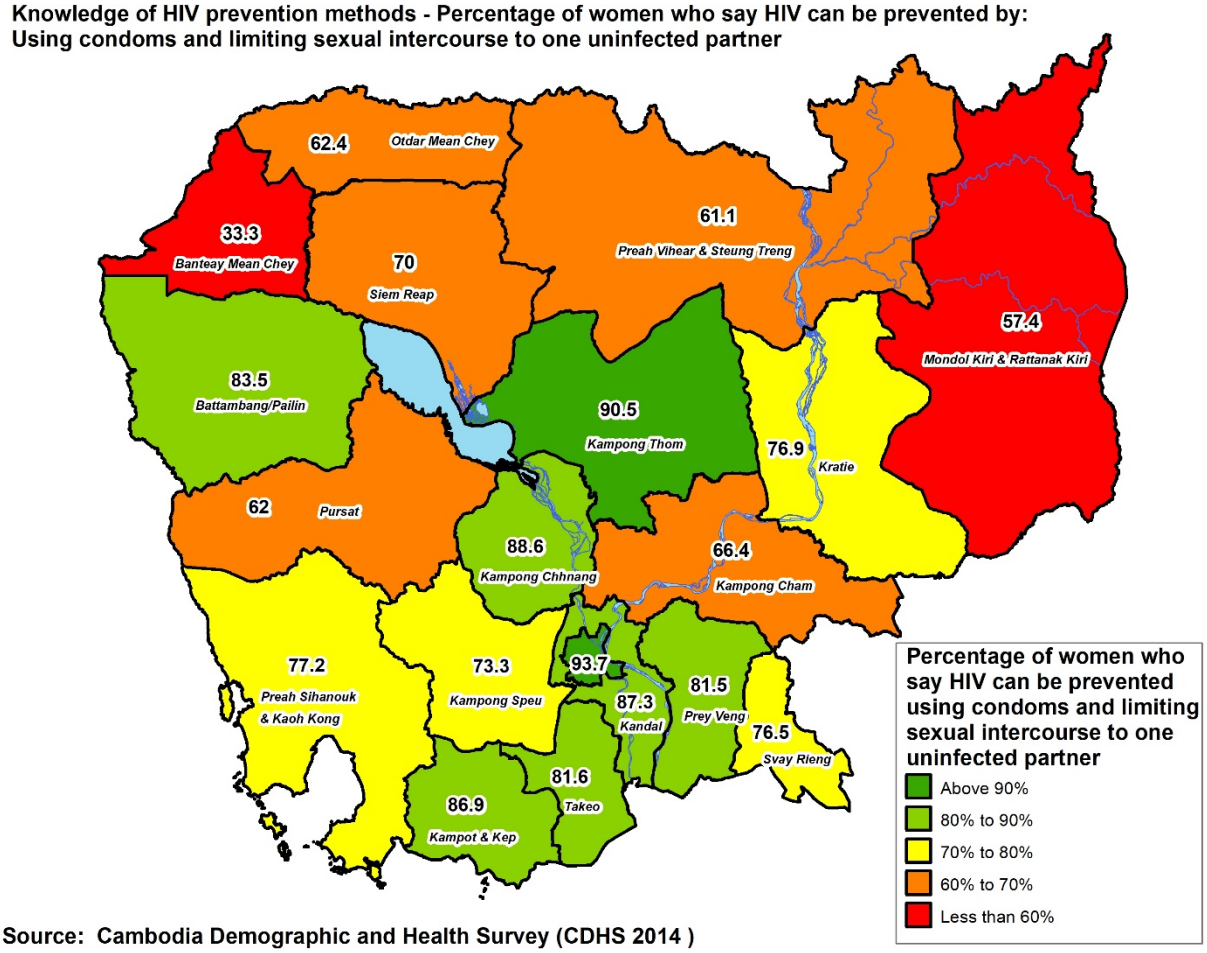
Map 30. HIV condom one partner knowledge men



Source: Cambodia Demographic and Health Survey (CDHS 2014)

Again Siem Reap displays a lower understanding of HIV than other provinces.

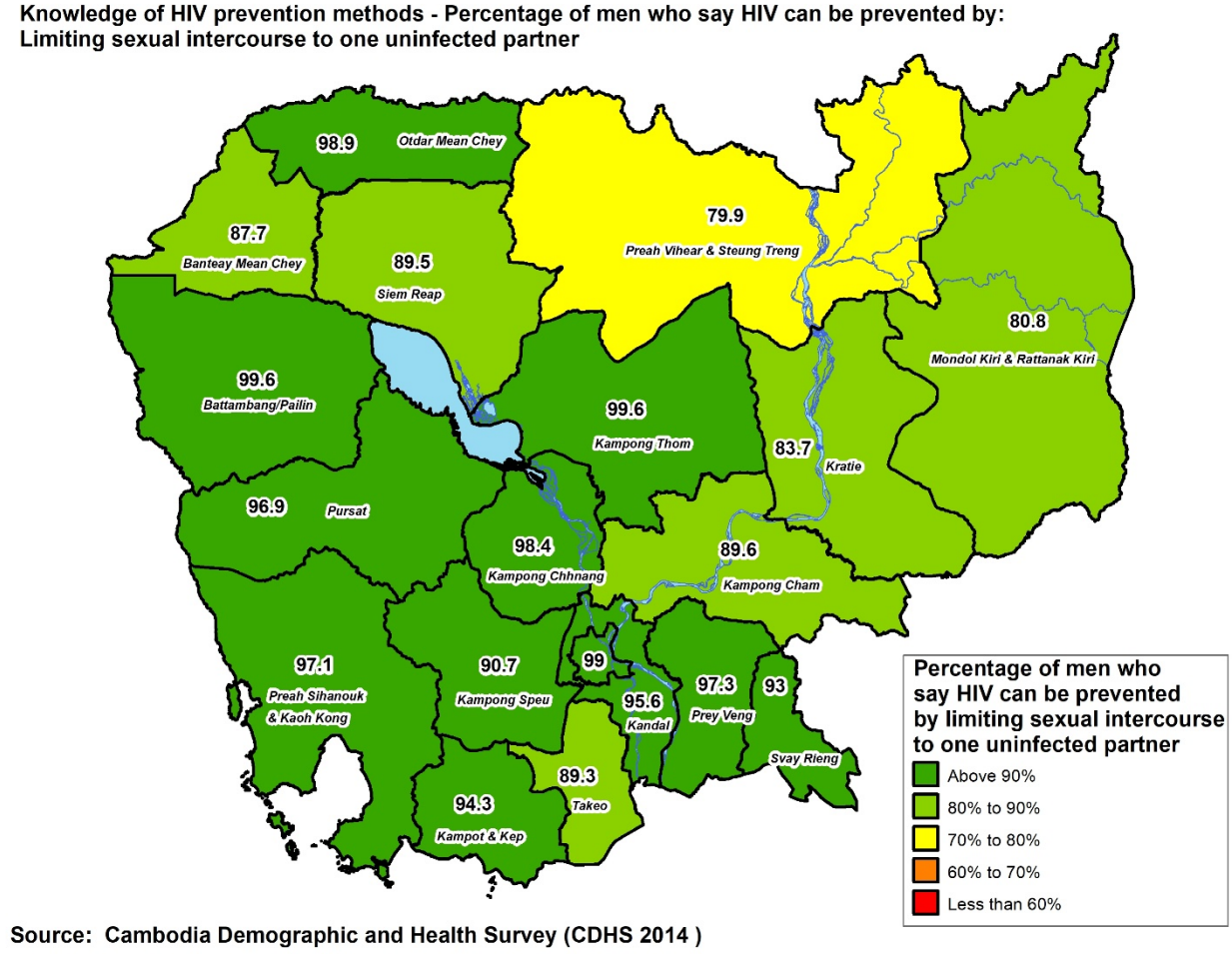
Map 31. HIV condom one partner knowledge women



Source: Cambodia Demographic and Health Survey (CDHS 2014)

The very low knowledge score regarding condom use for HIV prevention in Banteay Mean Chey province is striking and may be due to the high number of transient migrant women in towns like Poipet. The presence of casinos and related entertainment industries in Poipet is additional cause for concern and most likely should be addressed by prioritizing further public awareness raising campaigns.

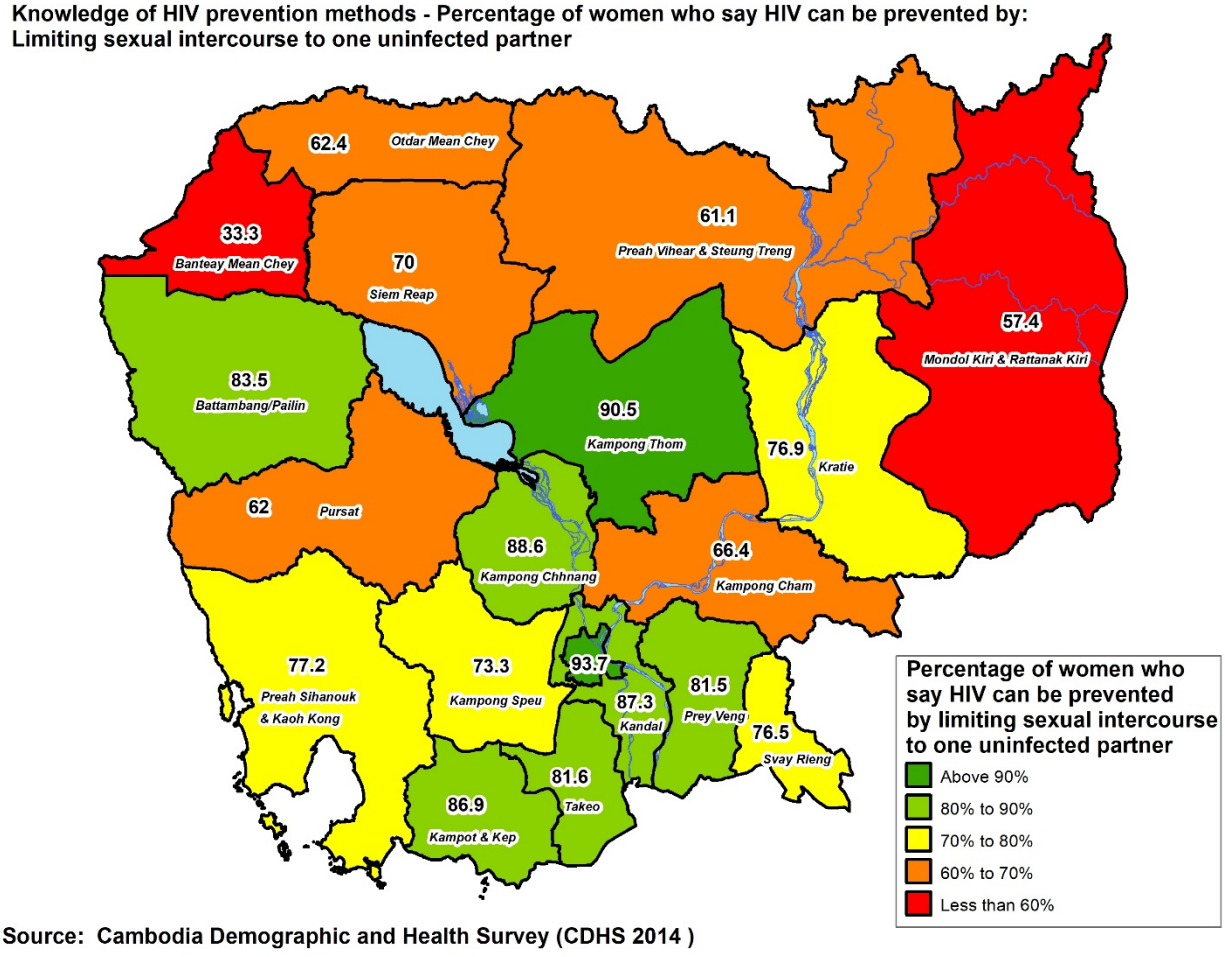
Map 32. HIV one partner knowledge men



Source: Cambodia Demographic and Health Survey (CDHS 2014)

Men's knowledge regarding the prevention of HIV by limiting sexual intercourse to one uninfected partner appears to be relatively high when compared to women across Cambodia.

Map 33. HIV one partner knowledge women

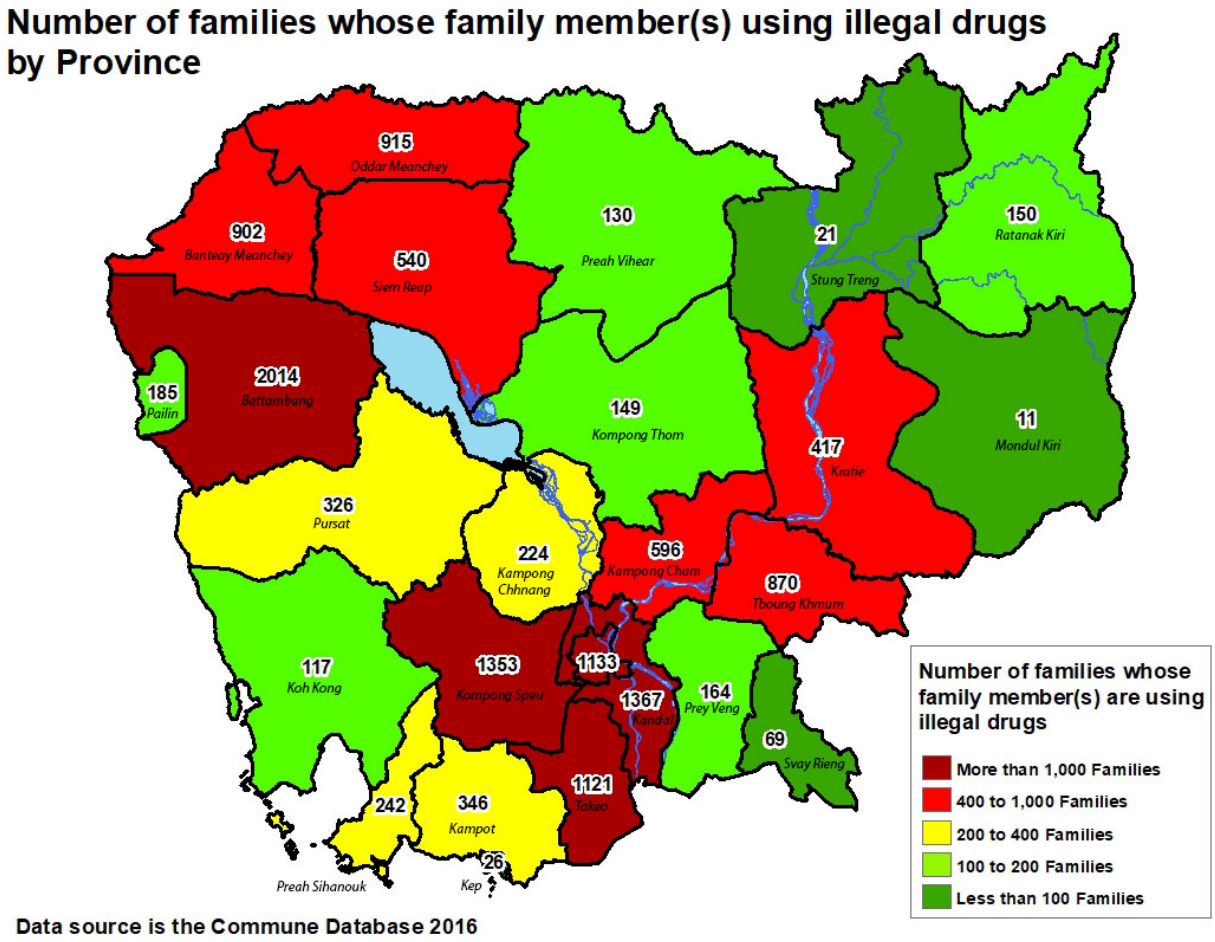


Source: Cambodia Demographic and Health Survey (CDHS 2014)

Knowledge regarding the prevention of HIV by limiting sexual intercourse to one uninfected partner appears to be much lower amongst women when compared to men across Cambodia.

Drug Use

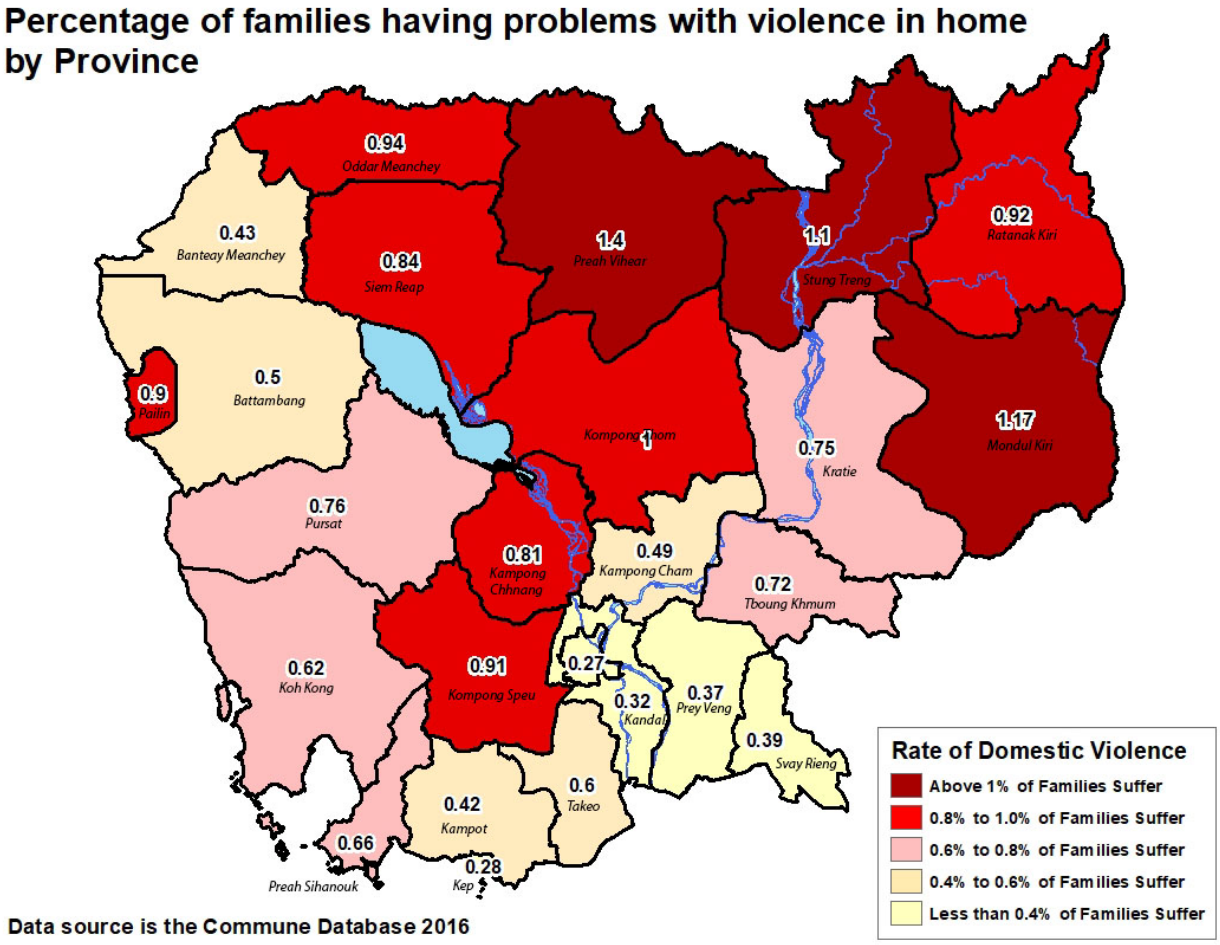
Map 34. Illegal Drug use



The map shows total numbers of illegal drug users by province. The viewer should be aware that there may well be significant under-reporting of this data with many users not being counted.

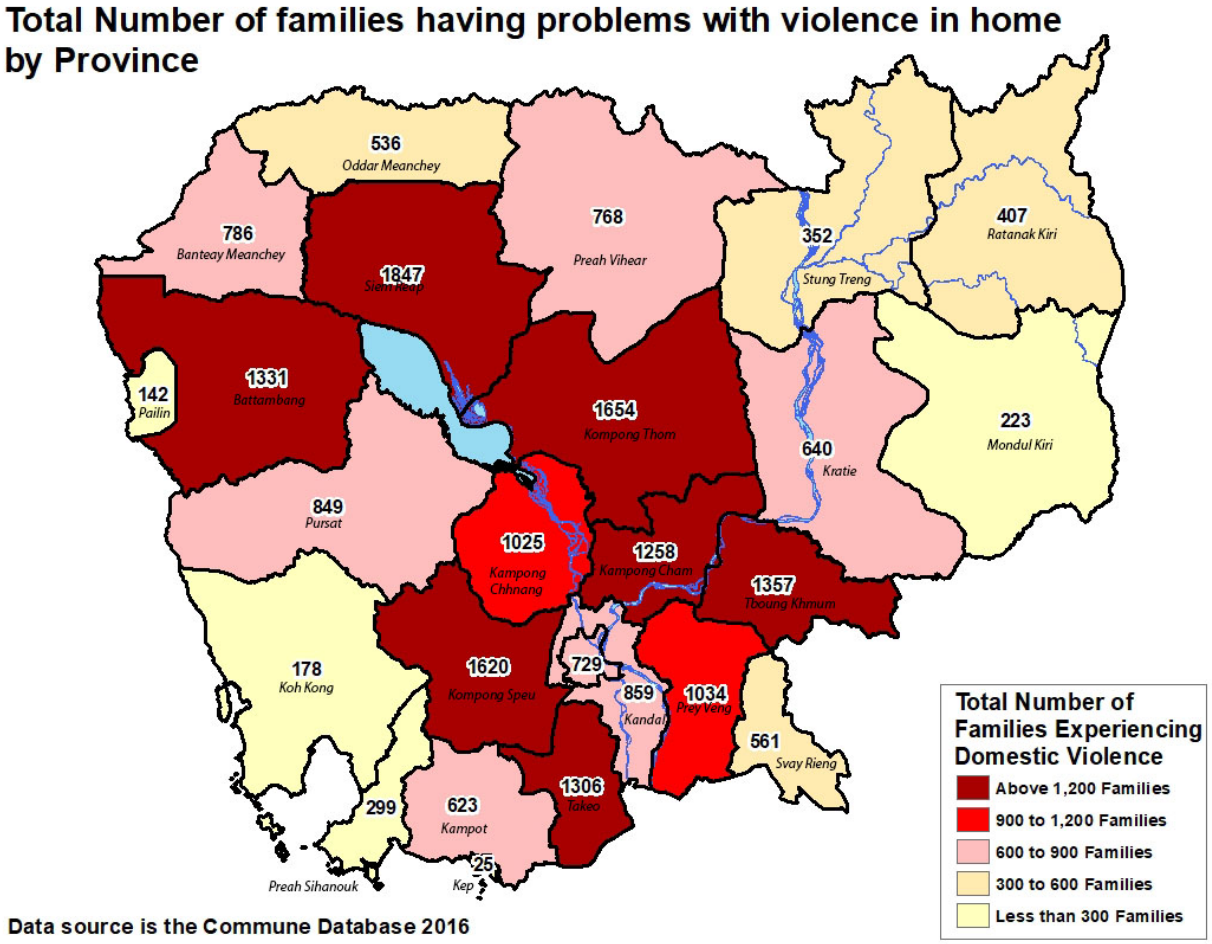
Domestic Violence

Map 35. Rate of Domestic Violence by Province



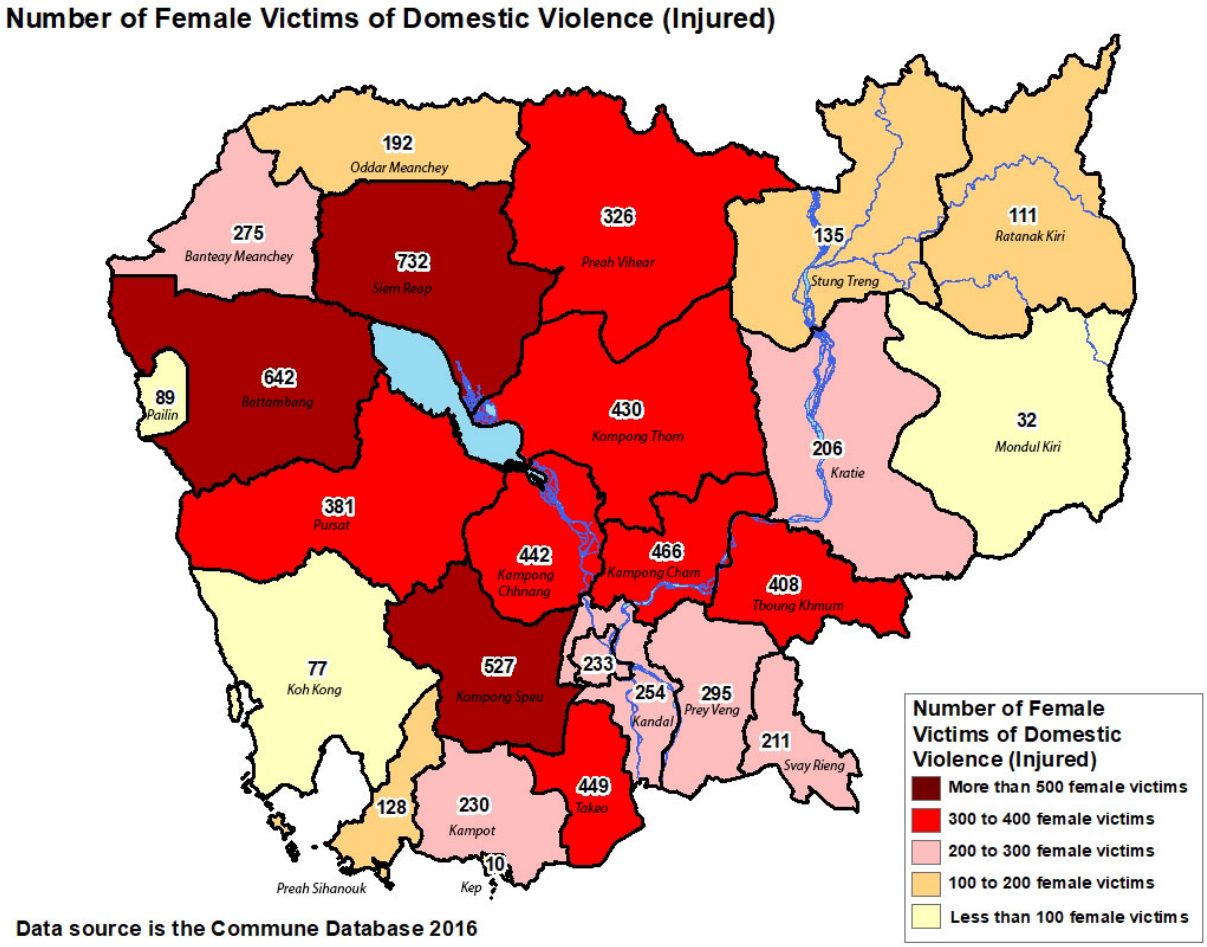
The map shows the percentage rate of families suffering domestic violence by province. Again North-Western Cambodian provinces appear to be the region suffering the highest rates.

Map 36. Total Domestic Violence by Province



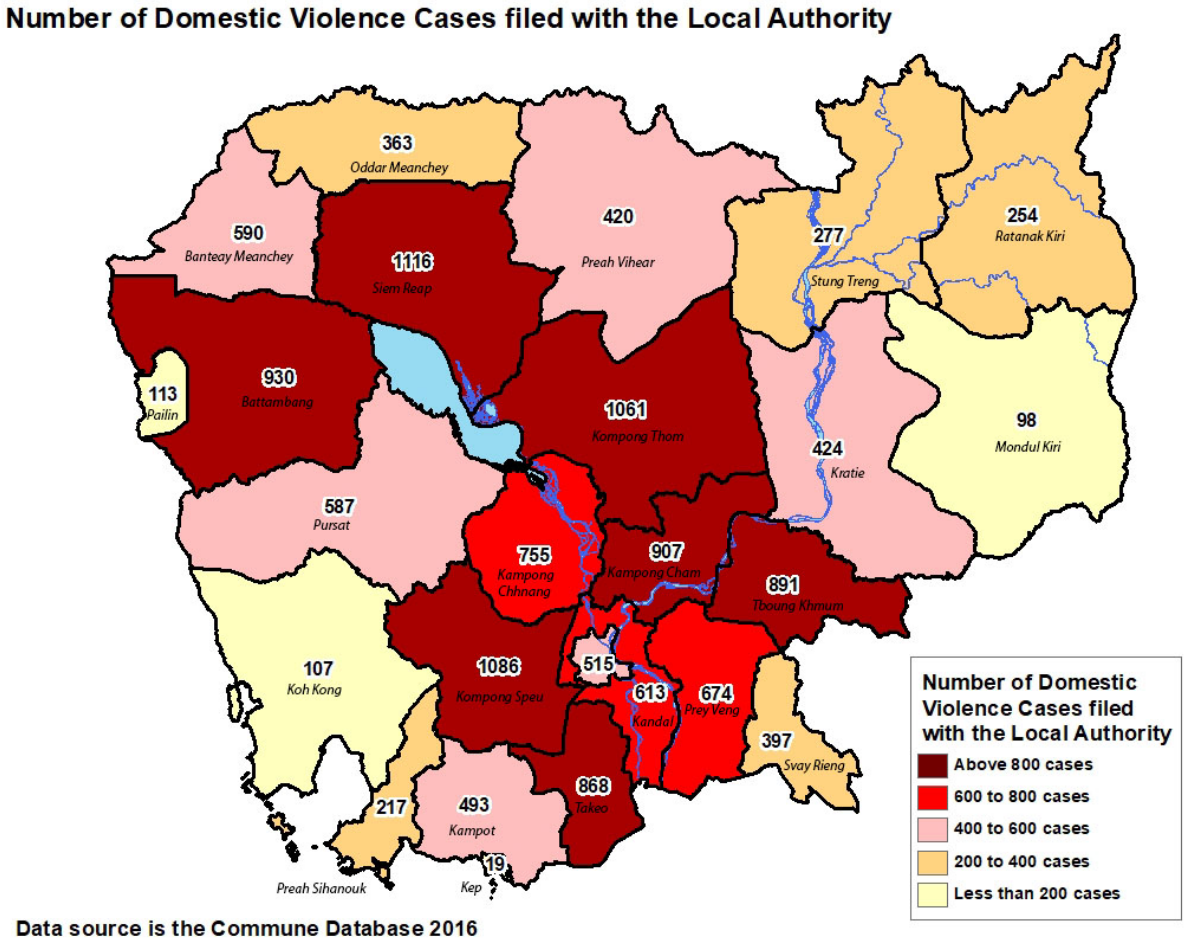
A different spatial pattern emerges when the total number of cases of domestic violence is mapped. Siem Reap province reports the highest number of cases however again the viewer is advised that there may well be significant under-reporting of this issue.

Map 37. Number of Female Victims of Domestic Violence (Injured)



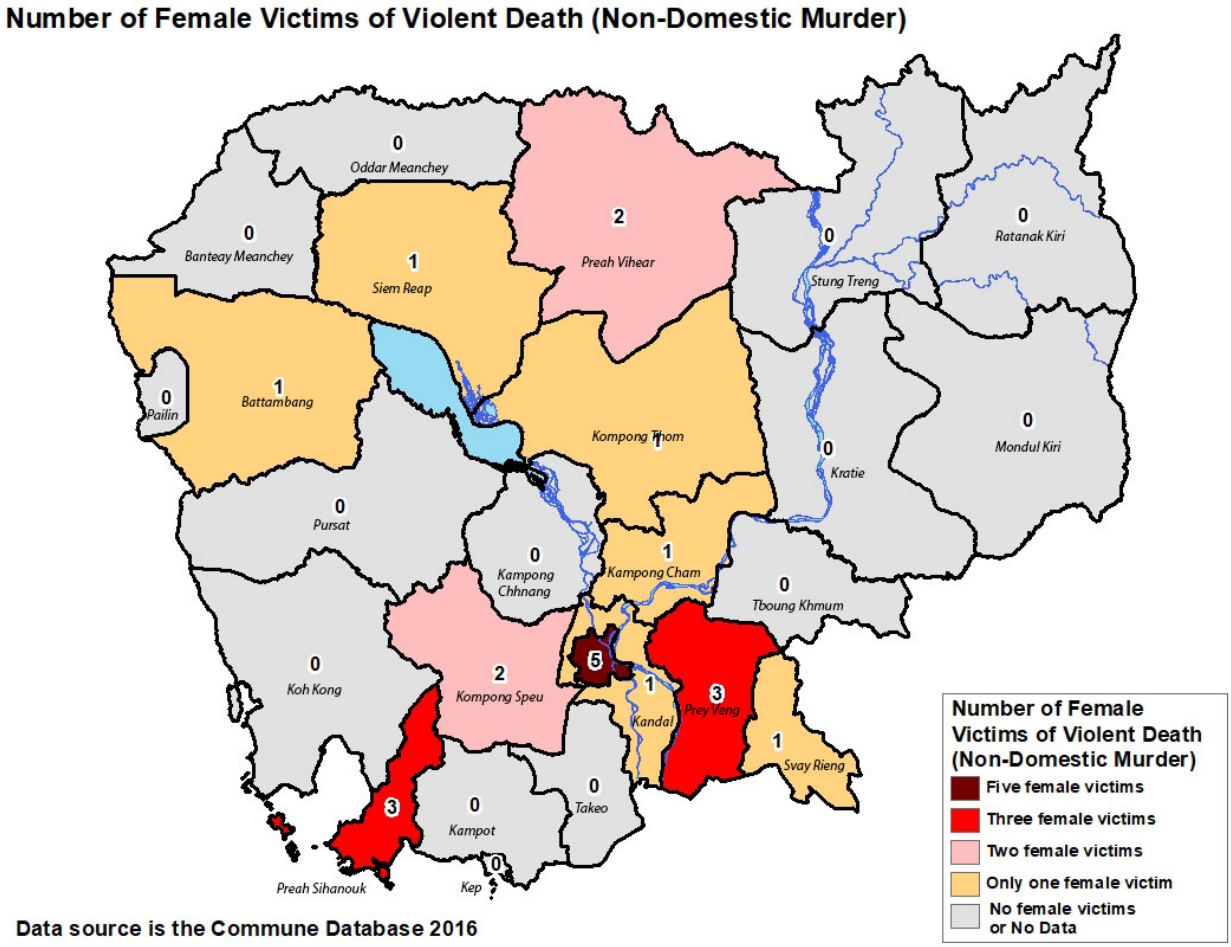
This map should be viewed with caution as the data on female victims of domestic violence may well be severely under-reported. Indeed, another way of looking at this map could be to view the provinces with high rates of reported cases as simply the provinces that are doing a better job at reporting.

Map 38. Number of domestic violence cases filed with the local authority



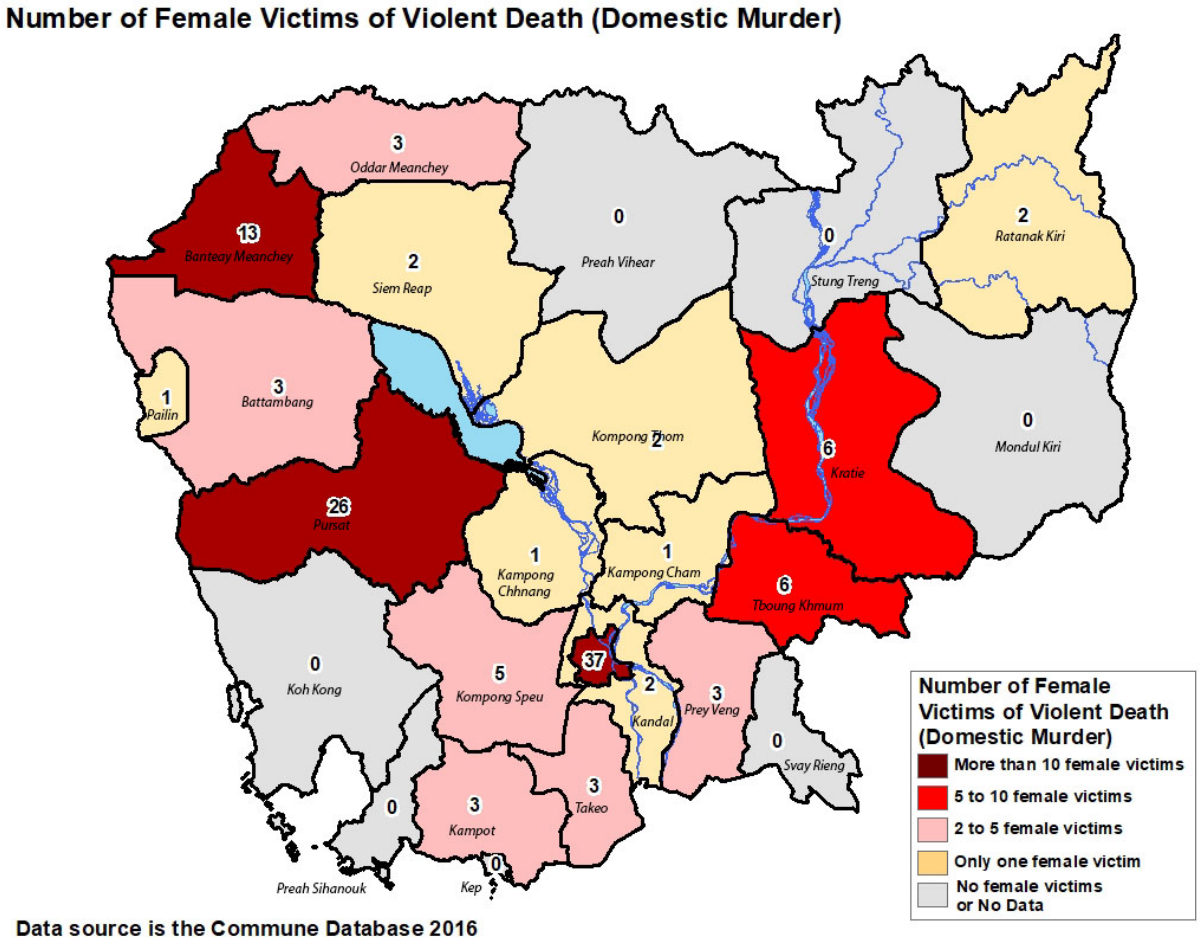
The map shows total number of domestic violence cases filed with local authorities. Again under-reporting may be a significant issue and may be the reason why some provinces report lower than others.

Map 39. Number of Female Victims of Violent Death (Non-Domestic)



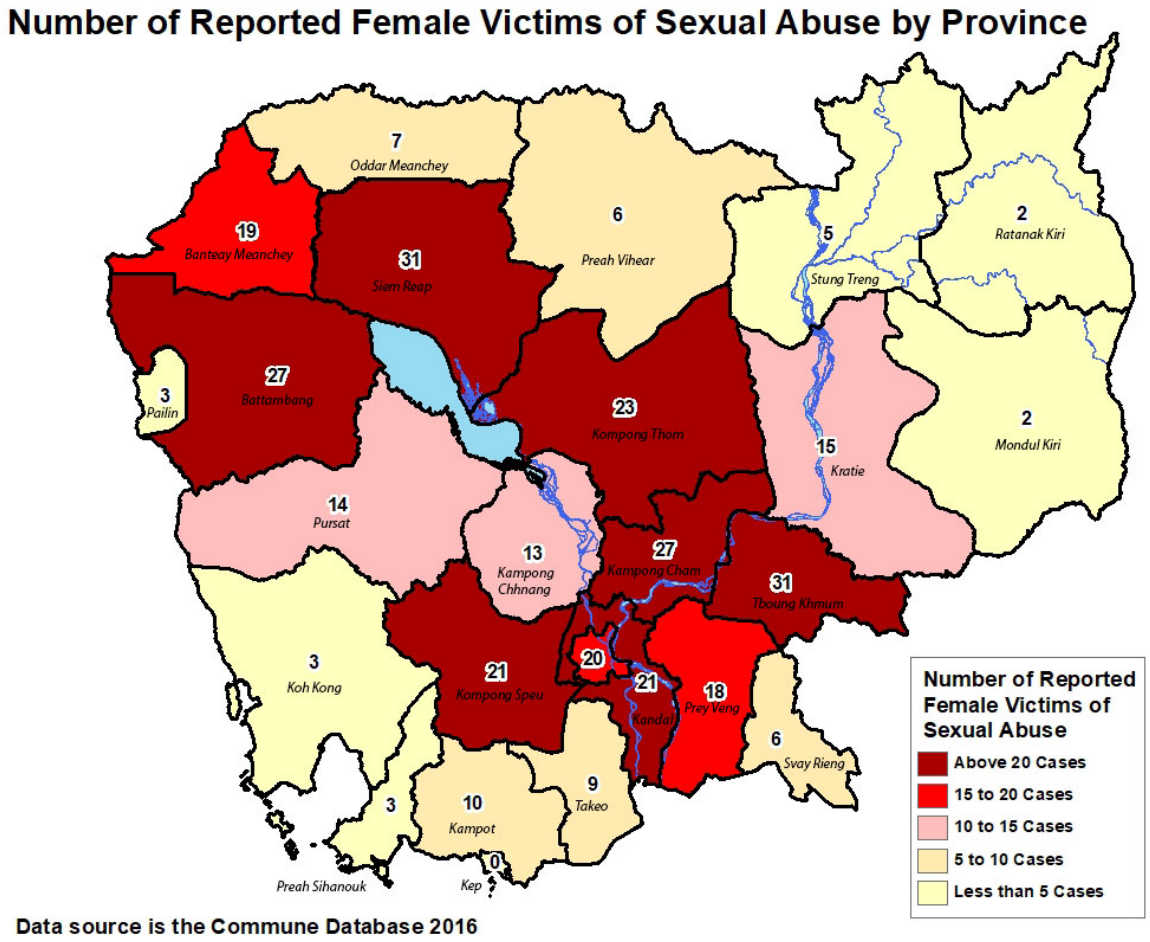
The map shows total number of female victims murdered by strangers or other non-family persons. The total numbers are quite small and maybe subject to significant under-reporting. Phnom Penh with five murders has the highest rate.

Map 40. Number of Female Victims of Violent Death (Domestic)



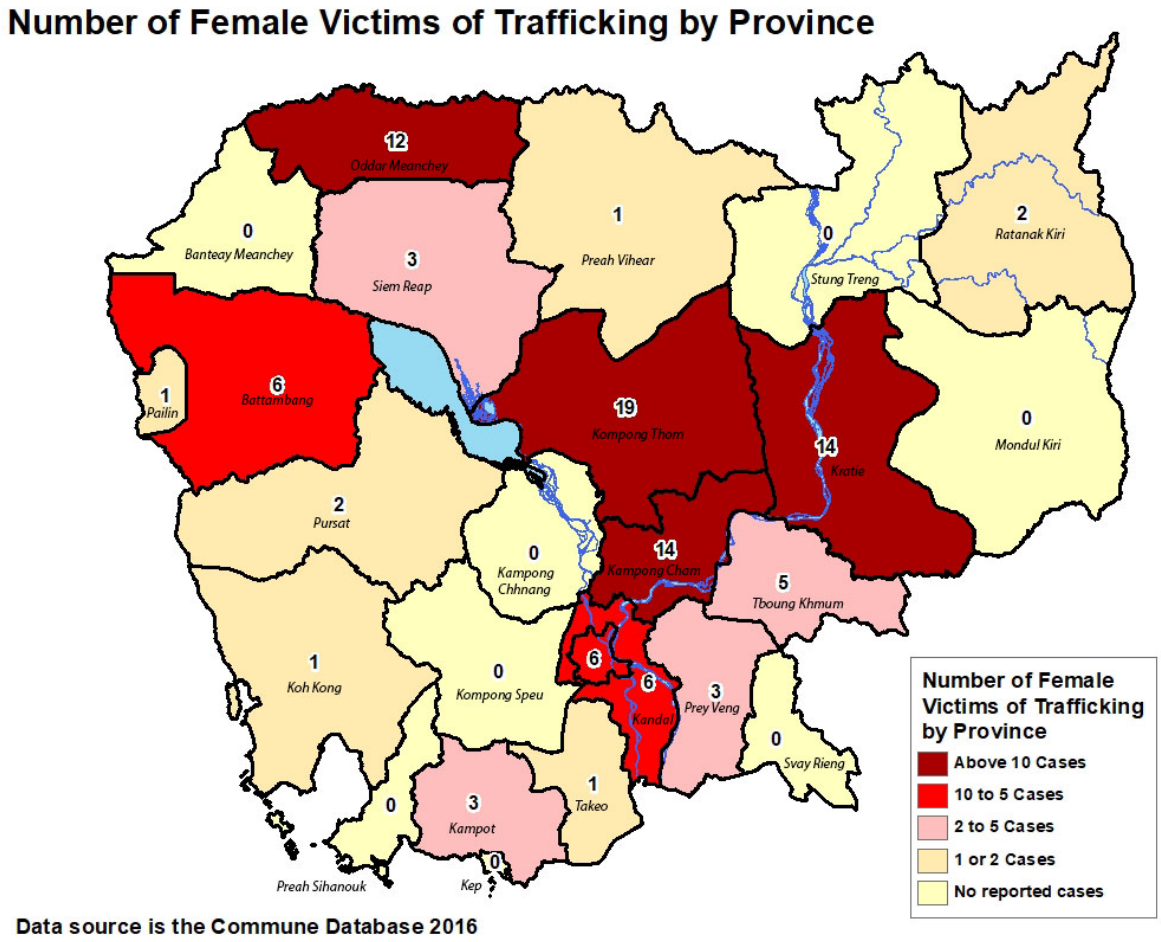
The map shows the total number of female victims murdered by a person in their own family. It is clear from this and the previous map that when a woman is the murder victim then the murderer is much more likely to be a family member than a non-family member. Phnom Penh followed by Pursat and then Banteay Meanchey have the highest number of such crimes.

Map 41. Number of Reported Female Victims of Sexual Abuse



Map shows the reported victims of sexual abuse by province. Again this map should be viewed with some caution as the data most likely suffers from significant under-reporting.

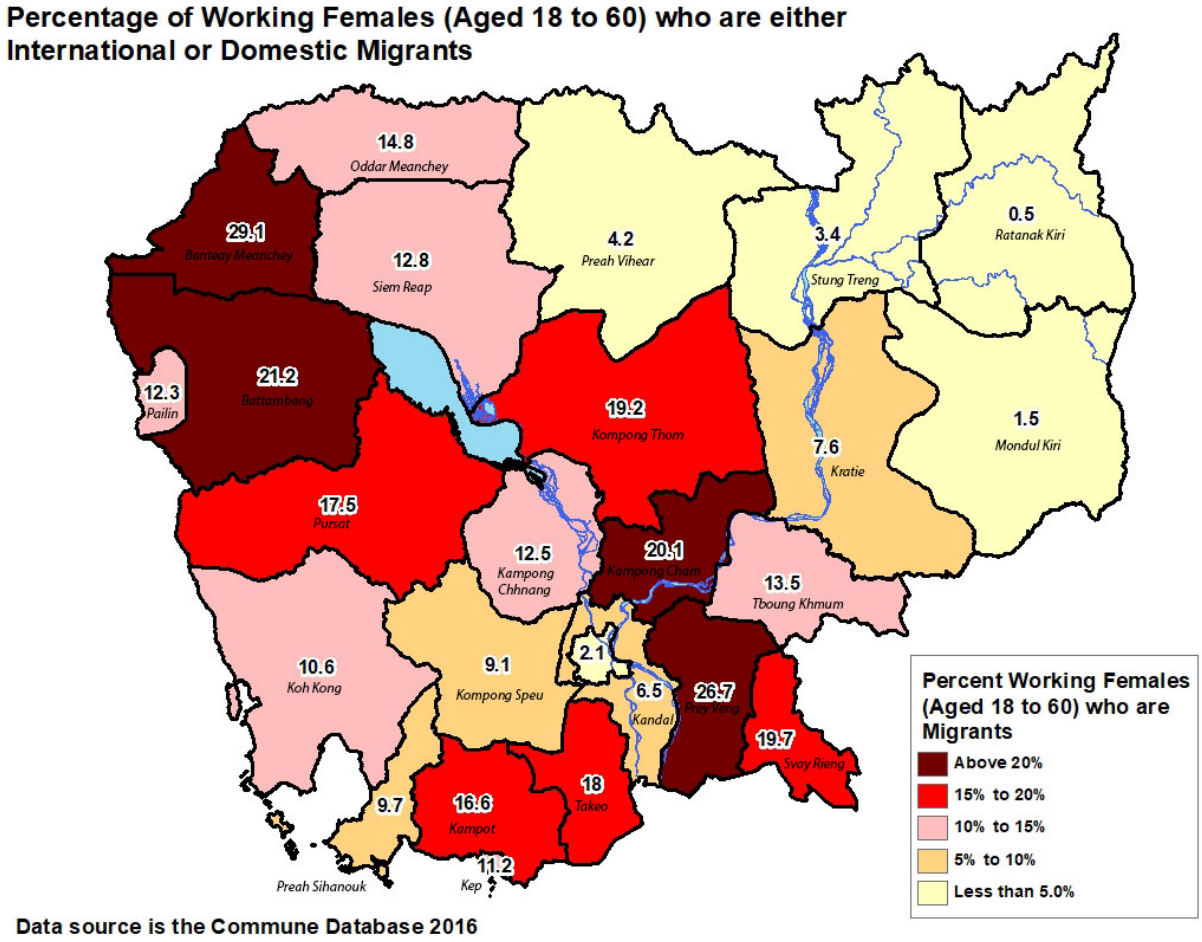
Map 42. Number of Female Victims of Trafficking by Province



Again this map should be viewed with some caution as the data most likely suffers from significant under-reporting. Given the above caveat the map shows that the three central provinces of Kompong Thom, Kratie and Kompong Thom have the highest number of trafficked female victims.

Migration

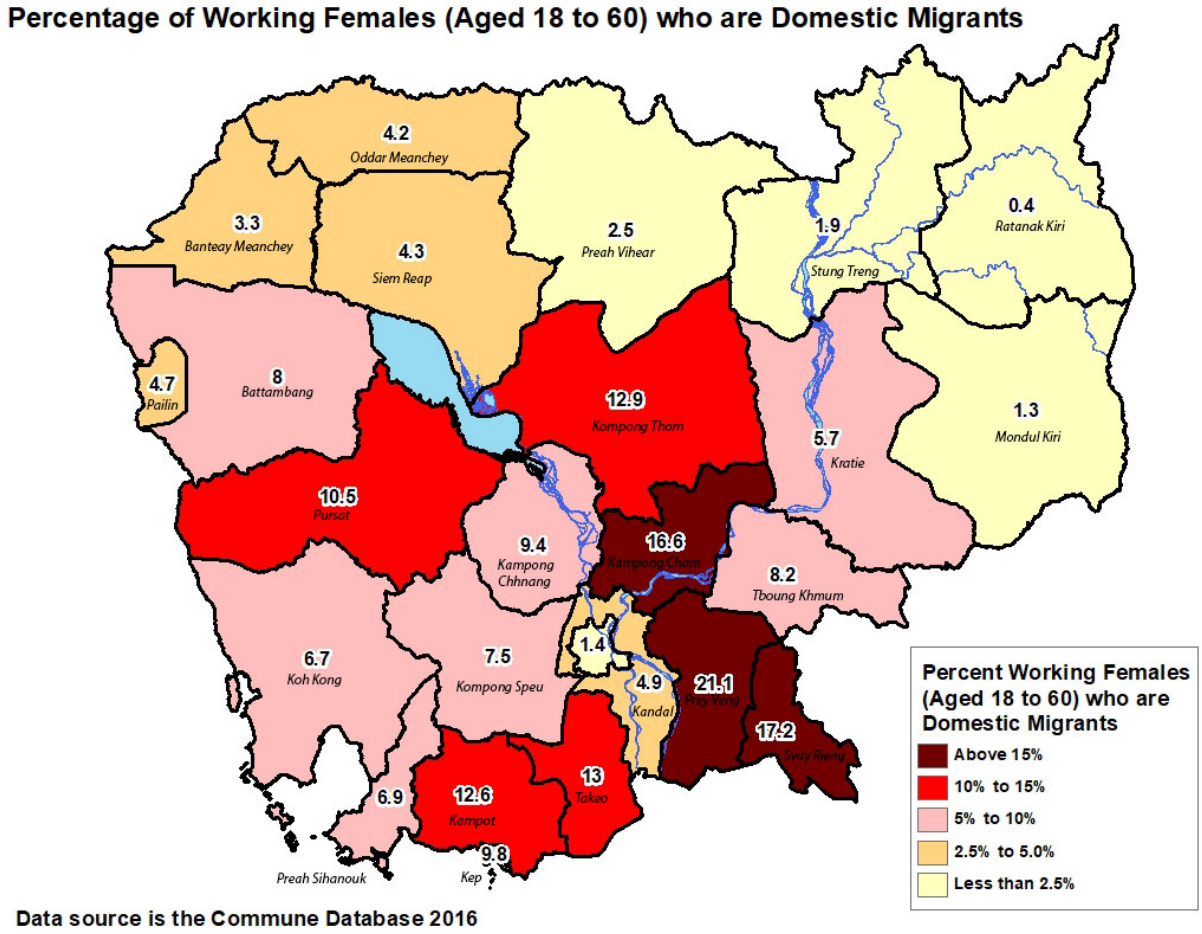
Map 43. Percentage of Working Females (Aged 18 to 60) who are Migrants



Data source is the Commune Database 2016

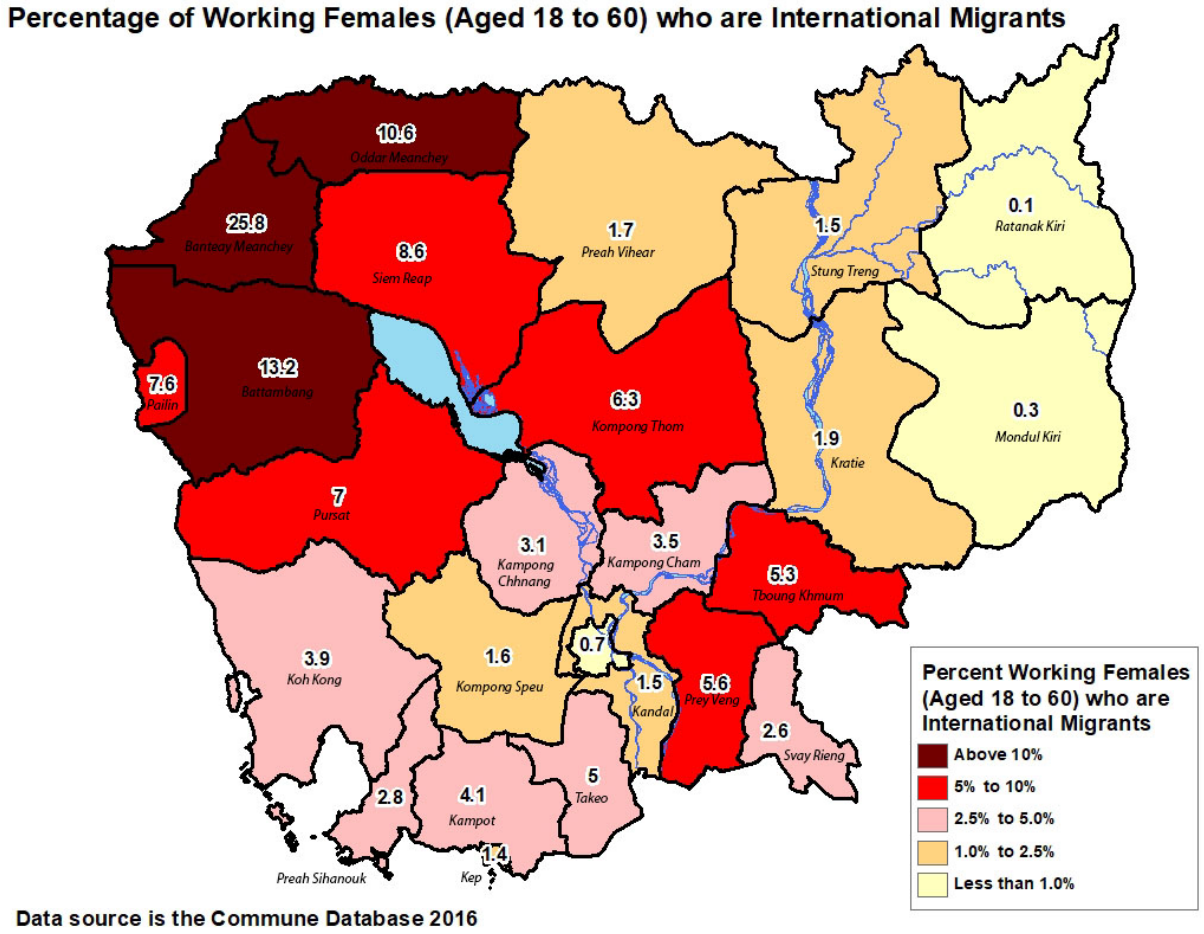
Unsurprisingly the map shows women migrants are concentrated in the two border provinces of Banteay Meanchey & Battambang (for international migration to Thailand) but it also shows that two provinces (Prey Veng & Kompong Cham) also have a high number of migrants present presumably due to domestic migration to the garment and manufacturing jobs located in factories around Phnom Penh.

Map 44. Percentage of Working Females (Aged 18 to 60) who are Domestic Migrants



The South-Eastern provinces (Svay Rieng, Prey Veng & Kompong Cham) have the highest rates of domestic migration presumably due to their proximity to the garment manufacturing jobs located in factories around or close to Phnom Penh.

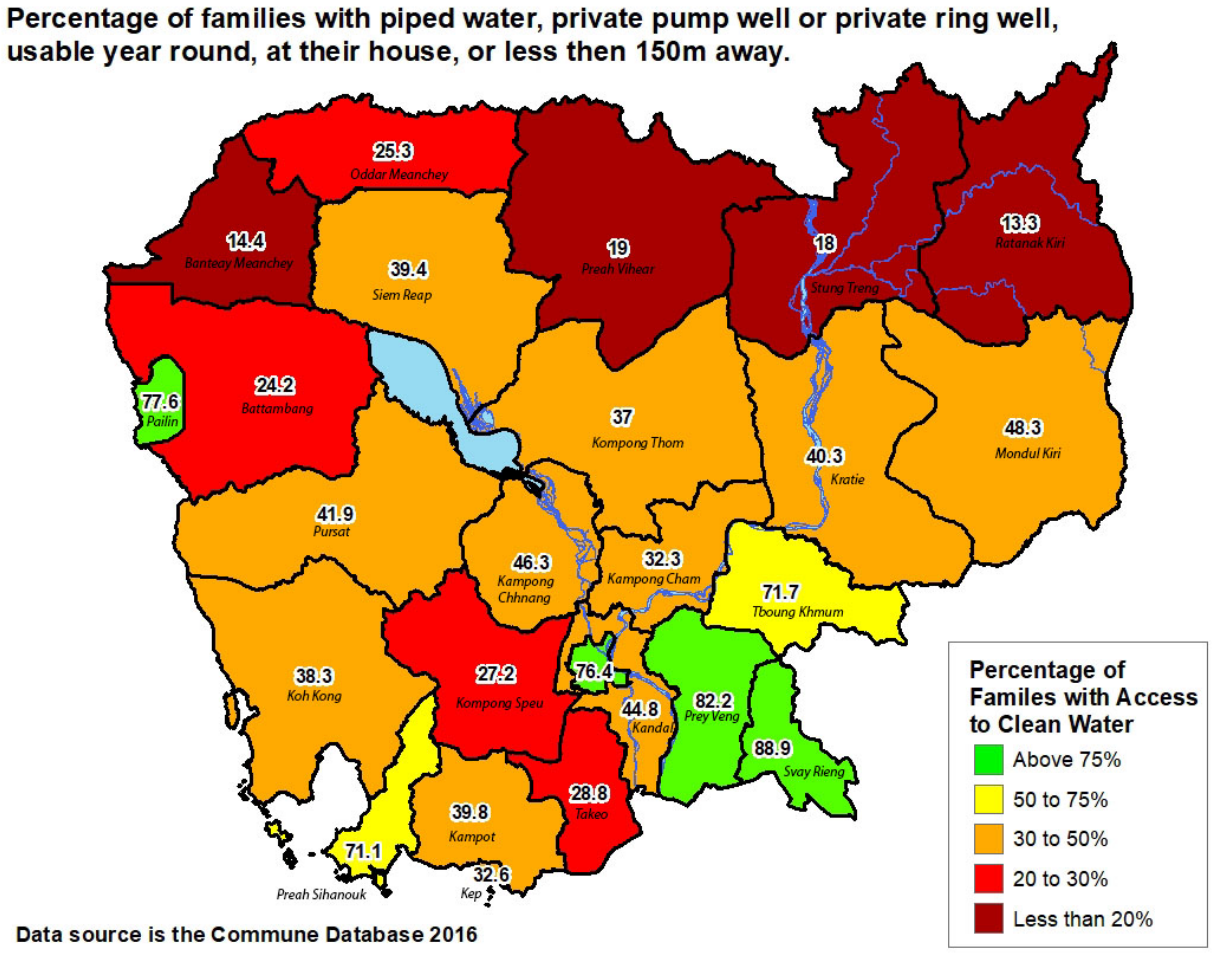
Map 45. Percentage of Working Females (Aged 18 to 60) who are International Migrants



Unsurprisingly the map shows women migrants are concentrated in the three North-Western border provinces of Oddar Meanchey, Banteay Meanchey & Battambang presumably because of international migration to Thailand.

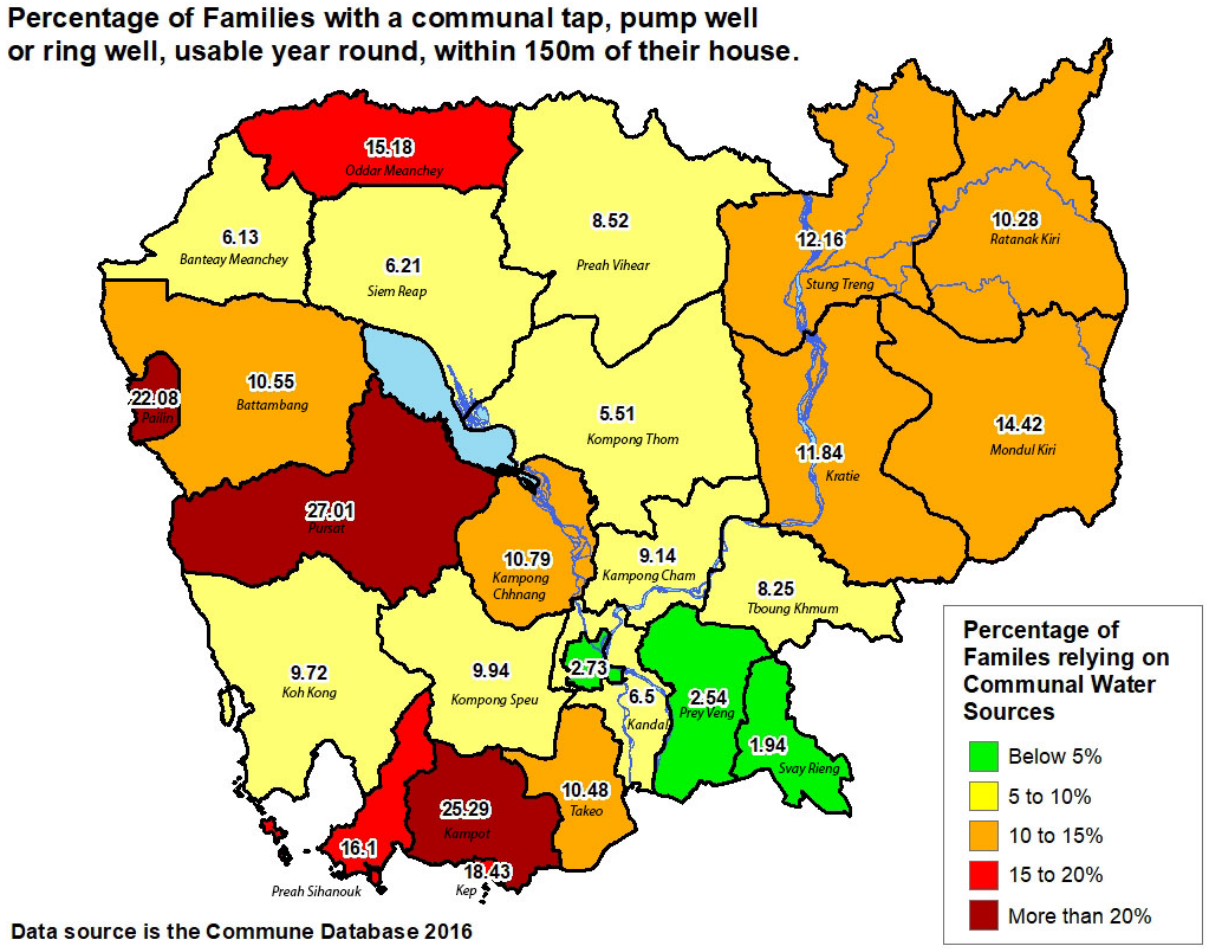
Clean Water

Map 46. Access to Clean Water by Province



Four provinces (Banteay Meanchey, Preah Vihear, Stung Treng & Rattanak Kiri) have low levels of access to clean water. The considerable depth of the ground water table in Banteay Meanchey which requires deep wells to be bored is probably a contributing factor.

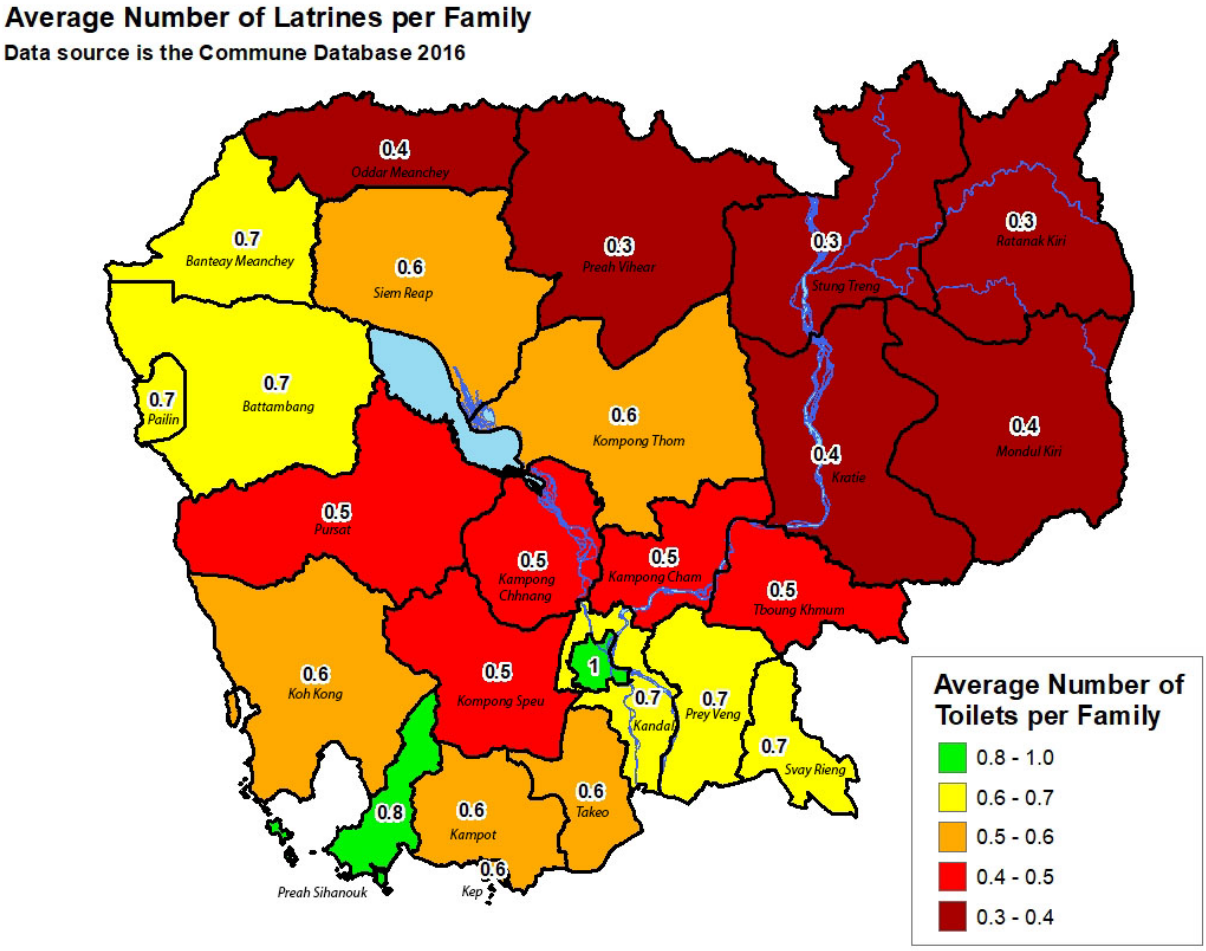
Map 47. Reliant on Communal Access to Clean Water by Province



The map shows that reliance on a shared communal clean water supply is much higher in some provinces than others. This may be both from necessity and due to traditional social and ethnic reasons.

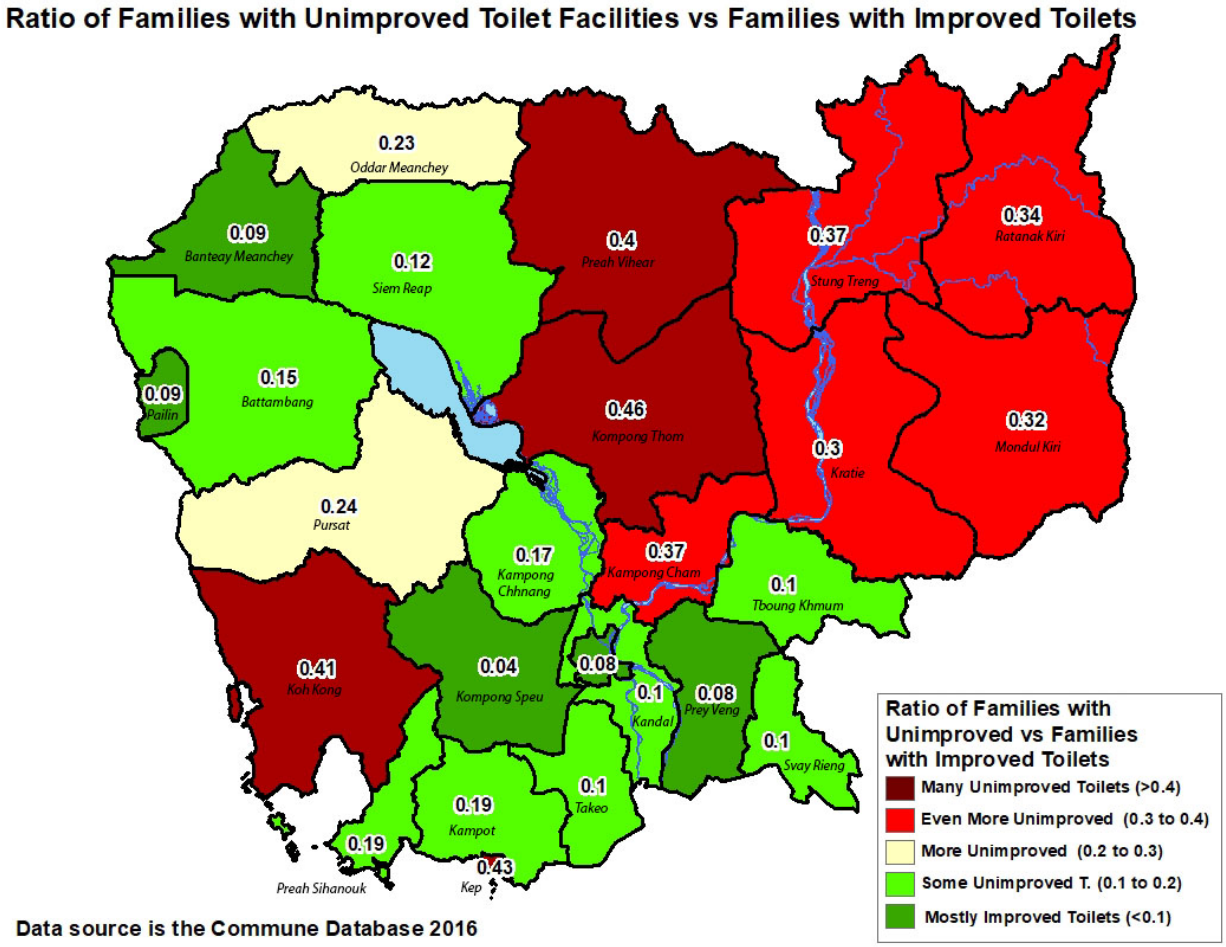
Sanitation

Map 48. Toilets per Family by Province



The map shows that families in North-eastern provinces are much less likely to have a toilet in their house than say Phnom Penh.

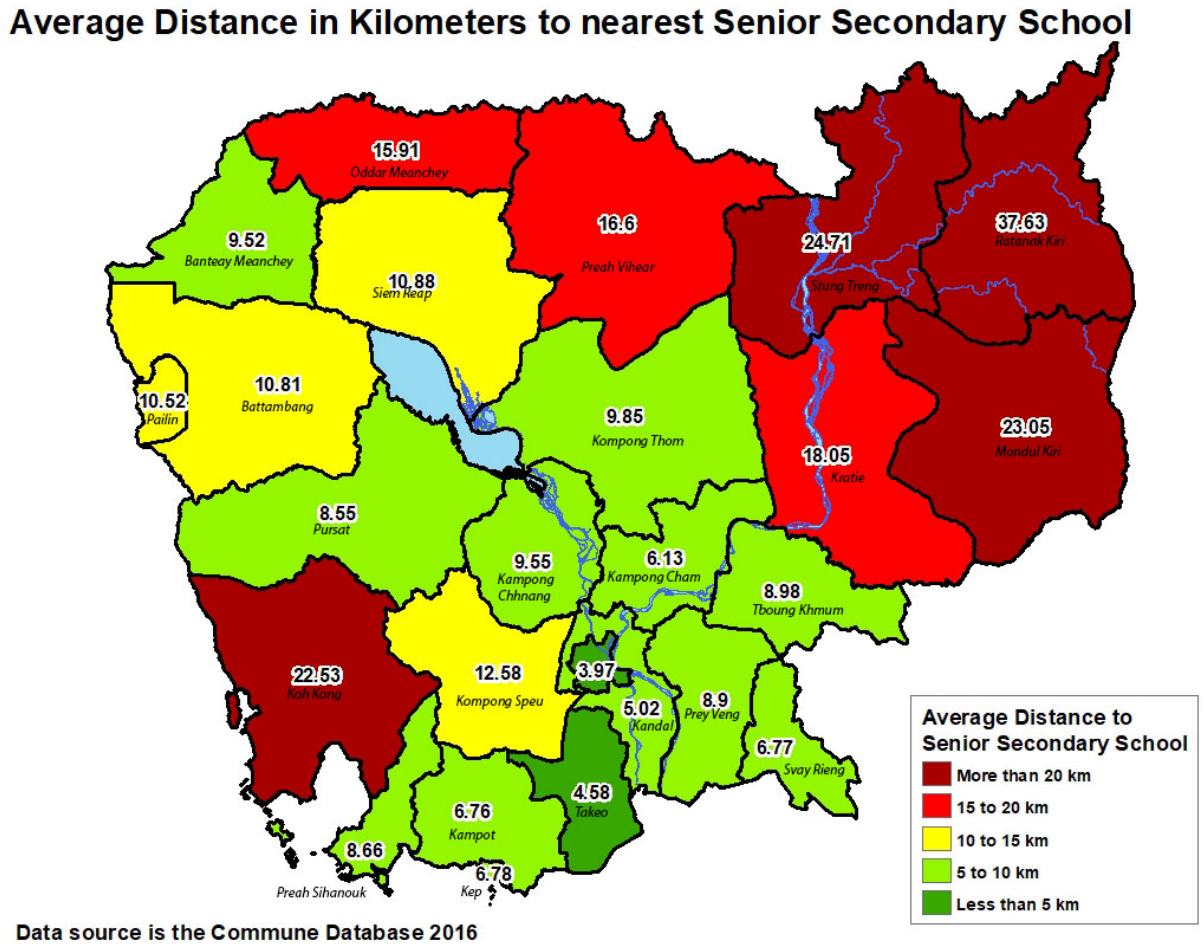
Map 49. Ratio of Families with Unimproved Toilet Facilities



Again the map shows that North-Eastern Cambodia suffers from a relative lack of improved sanitation. With regards to other regions, Koh Kong province also stands out as an anomaly.

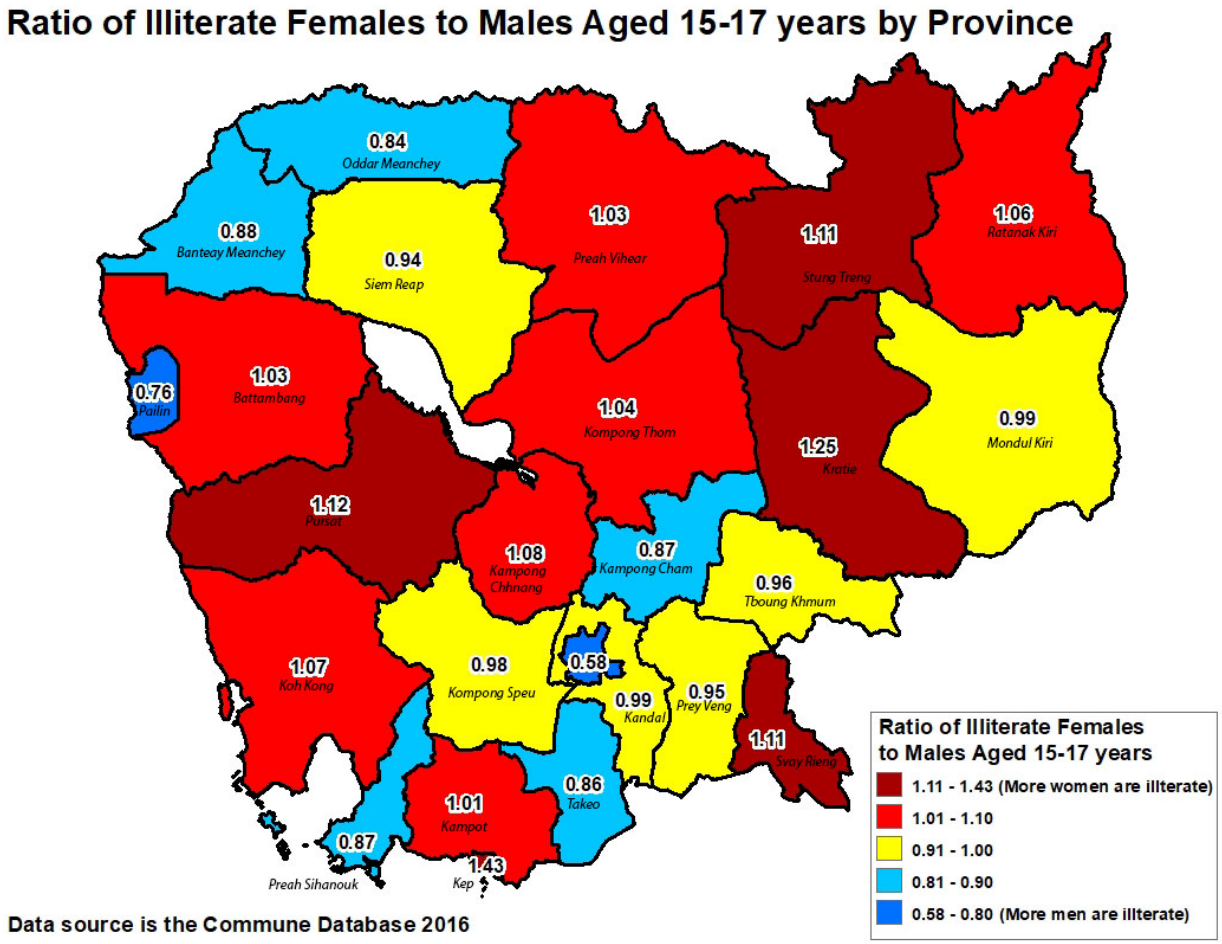
Education

Map 50. Average Distance to Senior Secondary School



Again the map shows that North-Eastern Cambodia suffers from a lack of access to secondary education. With regards to other regions, Koh Kong province also stands out as an anomaly.

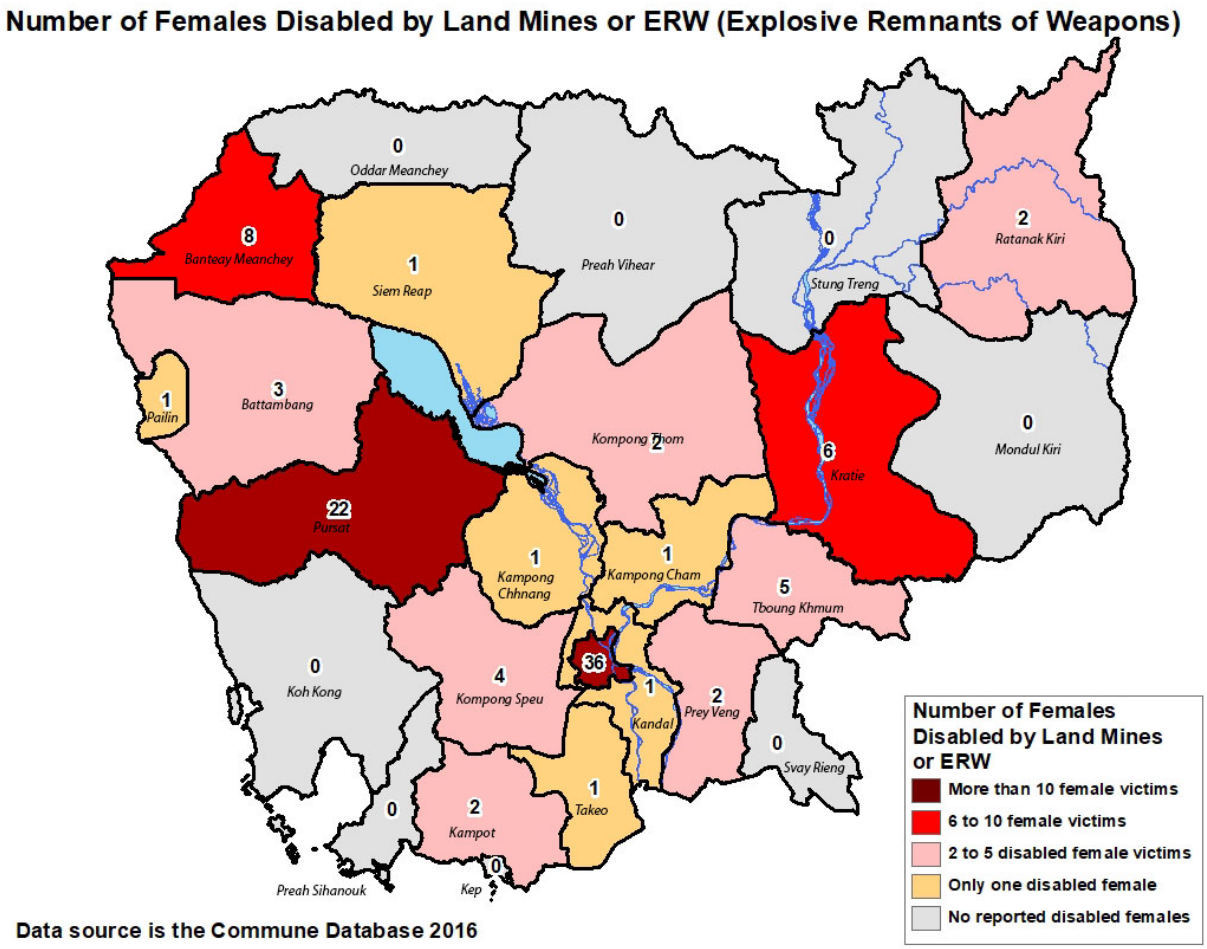
Map 51. Ratio of Illiterate Females to Males Aged 15-17 year



The map shows the ratio of illiterate females to males aged 15-17 years old. It is a useful proxy measure to see if gender differences in education access are significant. However, this indicator is also most likely picking up other issues. For example, the low literacy levels of women in Phnom Penh (compared to men) is most likely due to the presence of a high number of illiterate female migrant garment and manufacturing workers who have left school at an early age and are already in the workforce.

Landmines

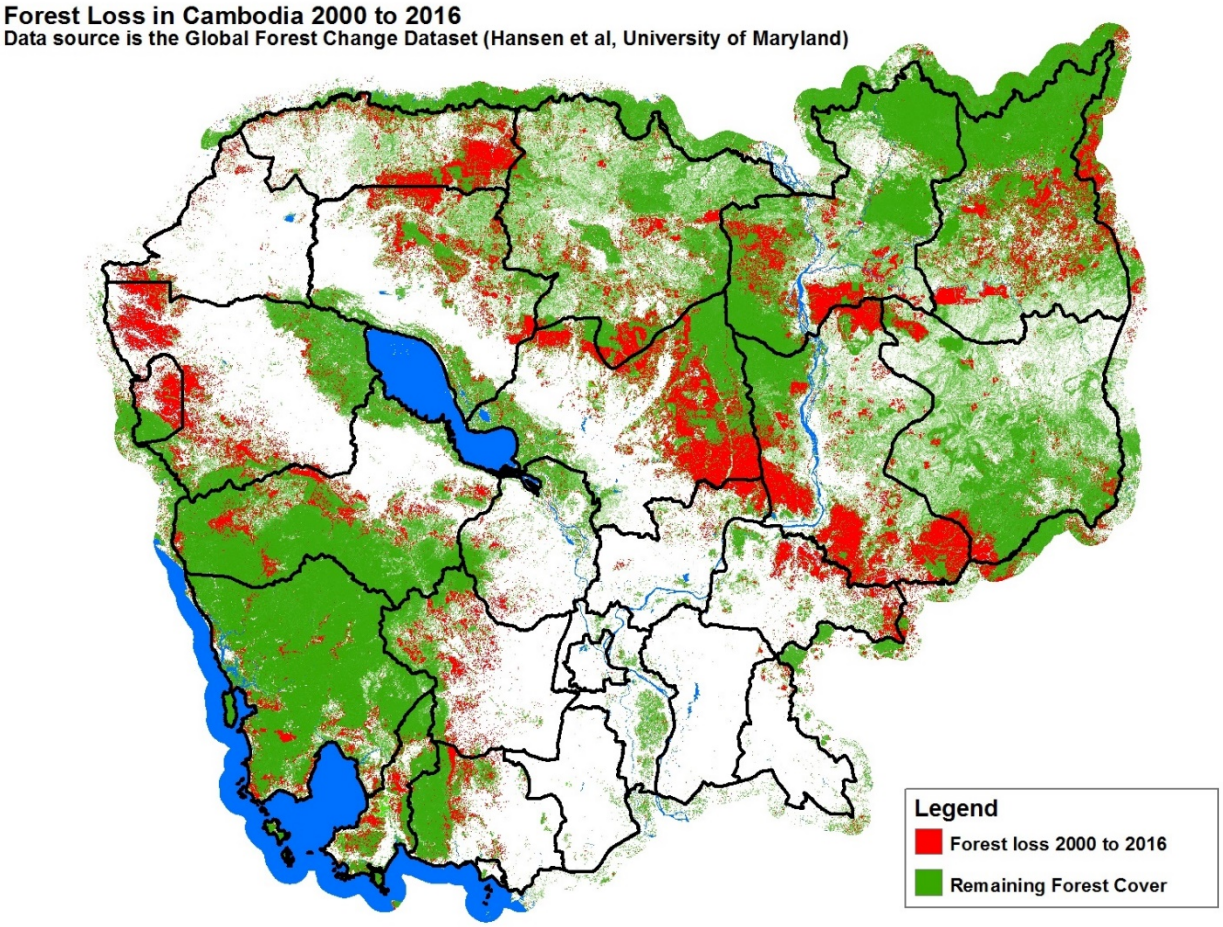
Map 52. Number of female disabled by Landmines/ERW



The map shows the known locations of female victims of landmines. Their current locations are not necessarily the same province that the accident occurred. For example, it is very unlikely that landmine accidents occur in Phnom Penh. It is also known that there are many more such victims than are recorded on this map.

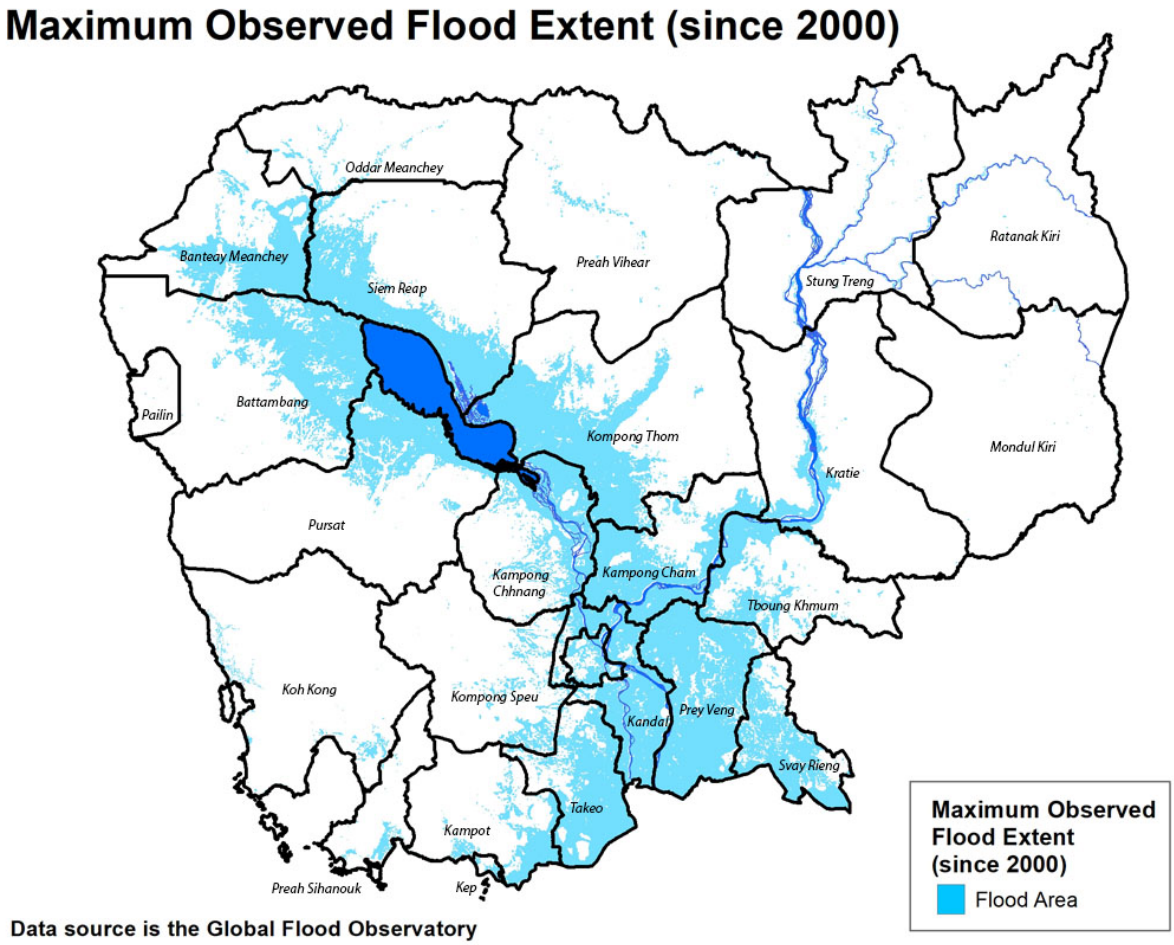
Environment

Map 53. Forest Loss 2000 to 2016



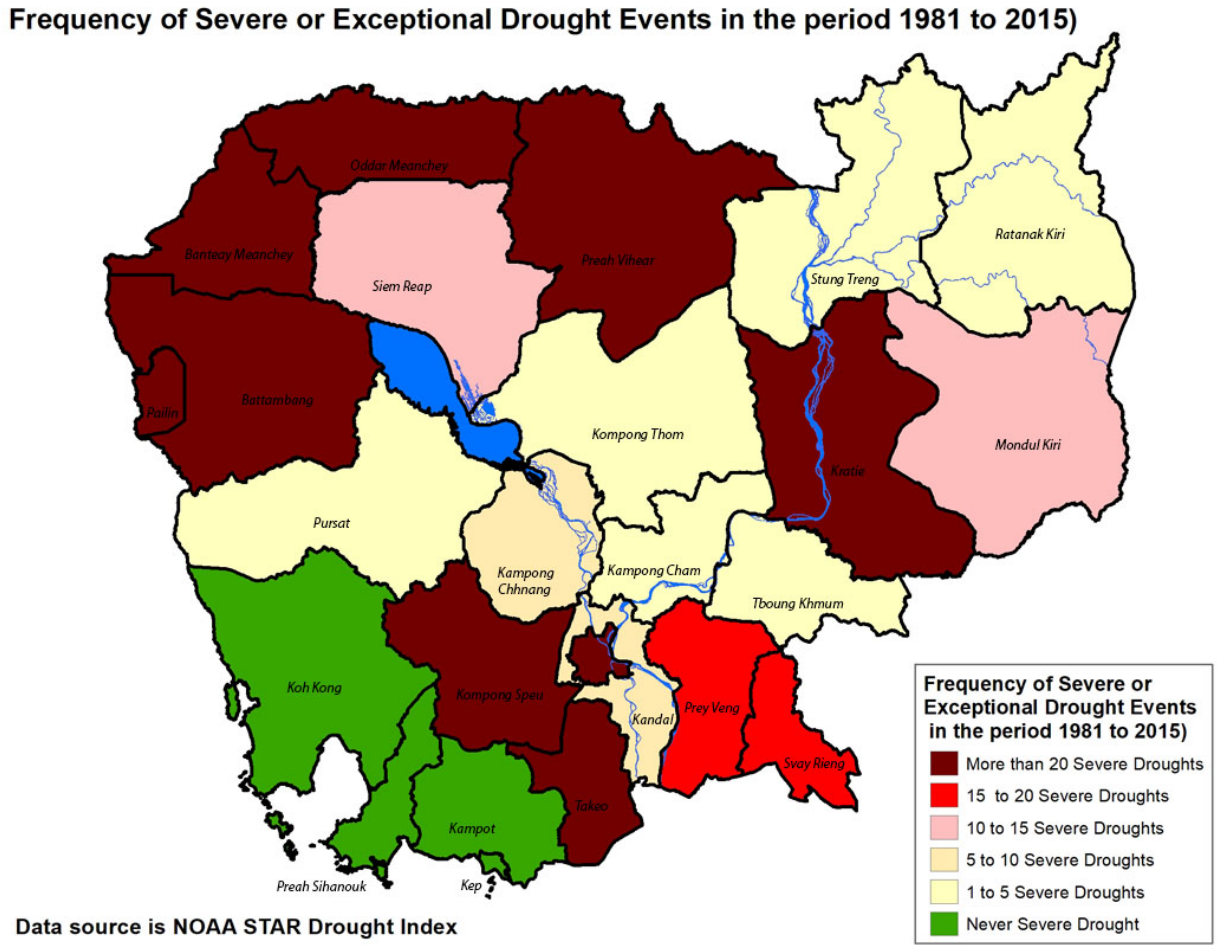
Since 2000 forest loss rates in Cambodia has been significant and rapid. The Global Forest Change Dataset from the University of Maryland is the most widely accepted and peer reviewed global forest dataset. It also offers a “neutral” means to assess and compare estimates of national forest loss by implementing standard definitions within a single global remote sensing methodology across countries.

Map 54. Maximum Observed Flood Extent



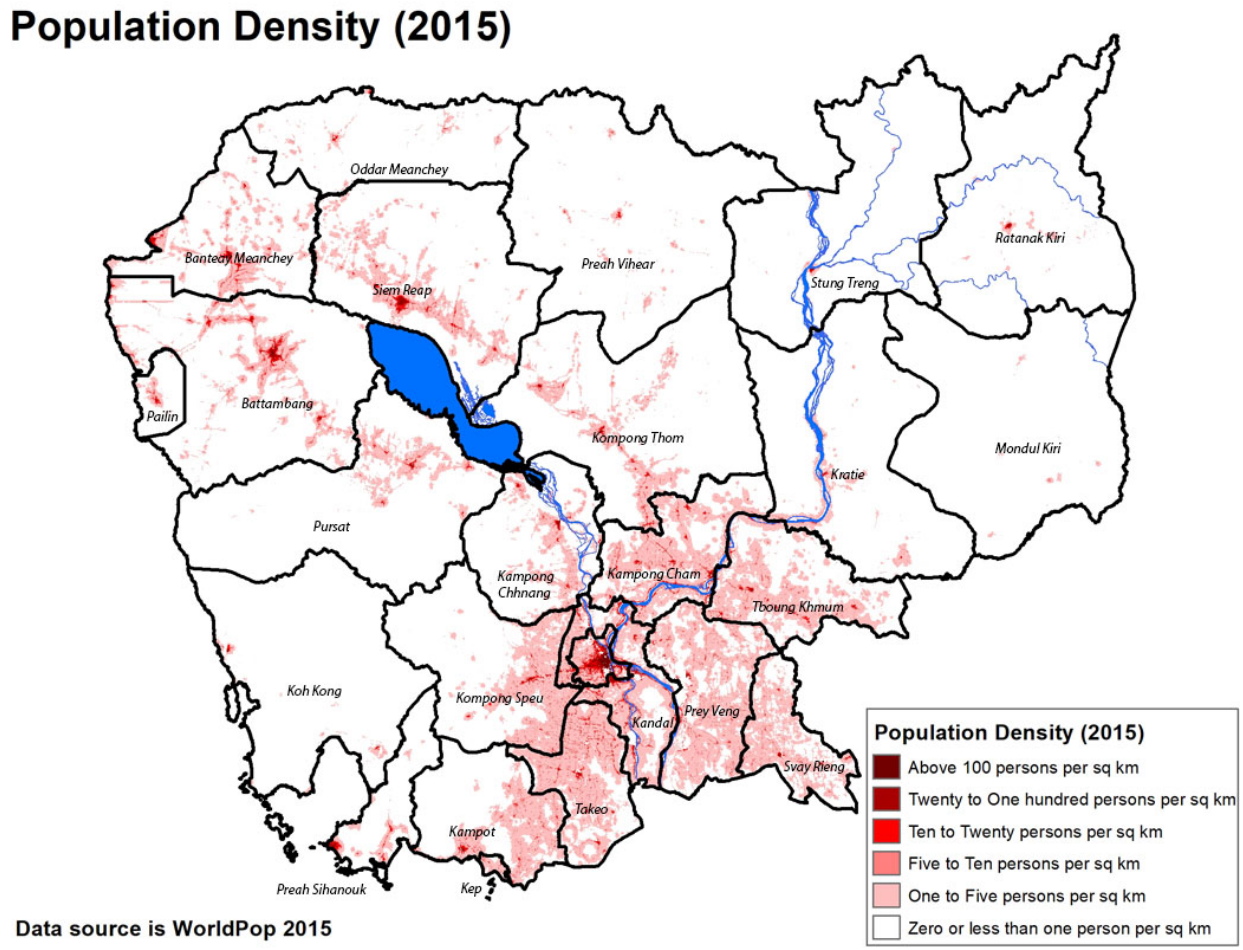
There are in fact two types of major flood event in Cambodia. The first is a flood event on the main Lower Mekong river that can best be characterized by the flooding that occurred in 2000. The second type of major flood event occurs in the North-Western flood plain of Tonle Sap starting at the Thai border that can best be characterized by the flooding that occurred in 2011.

Map 55. Frequency of Severe or Exceptional Droughts



Please note that the frequency of drought events (as recorded by NOAA) varies significantly between provinces. For example both Battambang and Preah Vihear provinces have suffered periods of severe or exception drought more than twenty times since 1981 whilst on the other-hand the neighboring provinces of Pursat and Kompong Thom have suffered such drought events five times or less in the same period.

Map 56. Population Density



Worldpop is an open source Global population dataset based on various sources including national census data, remote sensing data and modelling to achieve a spatial grid resolution of 100 meter pixels. The most recent Worldpop dataset available is 2015. Further information can be found here: http://www.worldpop.org.uk